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Bay Area's Computer Magazine

MAY 15, 1989 • #56

MICROCOMES™

MAC @ WORK

- Desktop Presentations With Aldus Persuasion
- Mac-PC Email With InBox
- Hard Disk Tips From BMUG

BOB WALLACE
OF QUICKSOFT

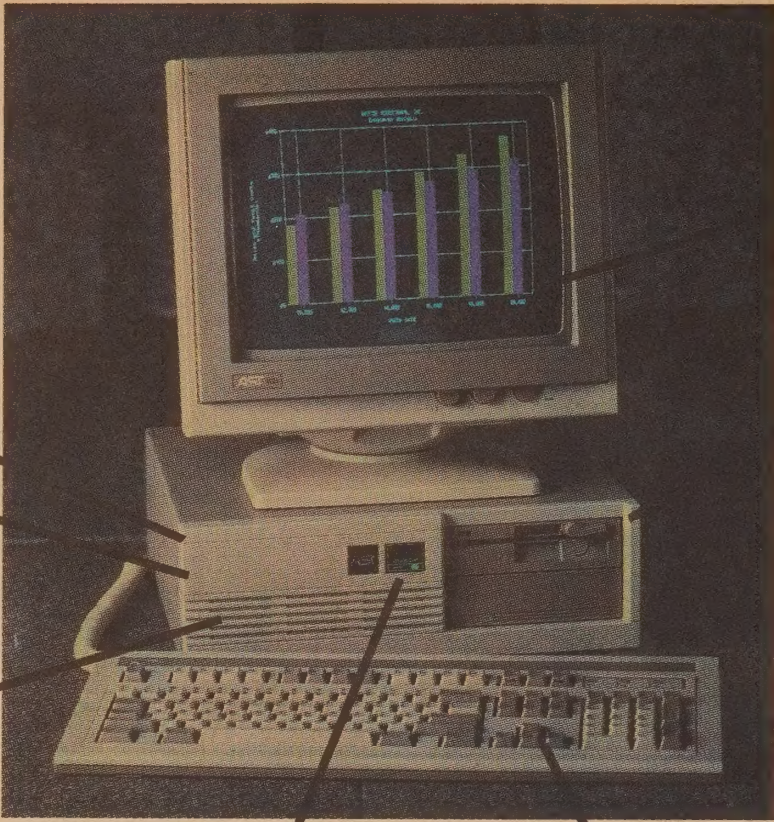
PC-WRITE

Author Bob Wallace
On Shareware And Keeping
The Customers Satisfied

REVIEWS

- Mitsubishi 286L Laptop
- PC Fax: Complete FAX/9600 Card

Bravo!



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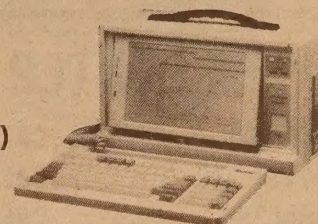
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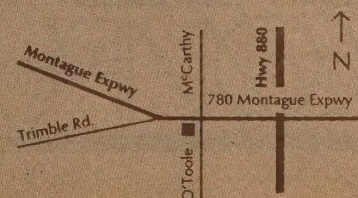
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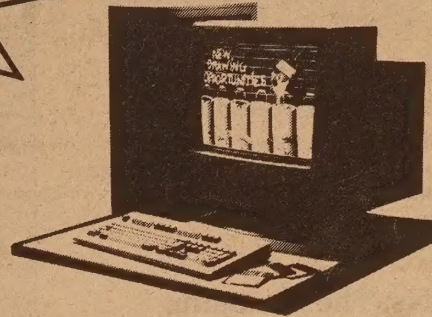
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	Without 80387	With 80387	Without 80387	With 80387
Landmark speed V1.10	52.4-52.7		39.4-39.7	
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TG 1011, 11 x 11, 16 bu	853
TB 1017, 11 x 17, 16 bu	884
TG 8011, 11 x 11, 16 bu	895
TG 8017, 11 x 17, 16 b	1,526
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The author of *Deluxe Paint*, the Amiga graphics program now in its third version, meets the press.

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LANs: The Changing Picture

By Wayne A. Yacco

Groupware and office automation are making LANs a cost-effective tool for small and medium-sized businesses.

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Atari's Back!

By Bill Gram-Reefer

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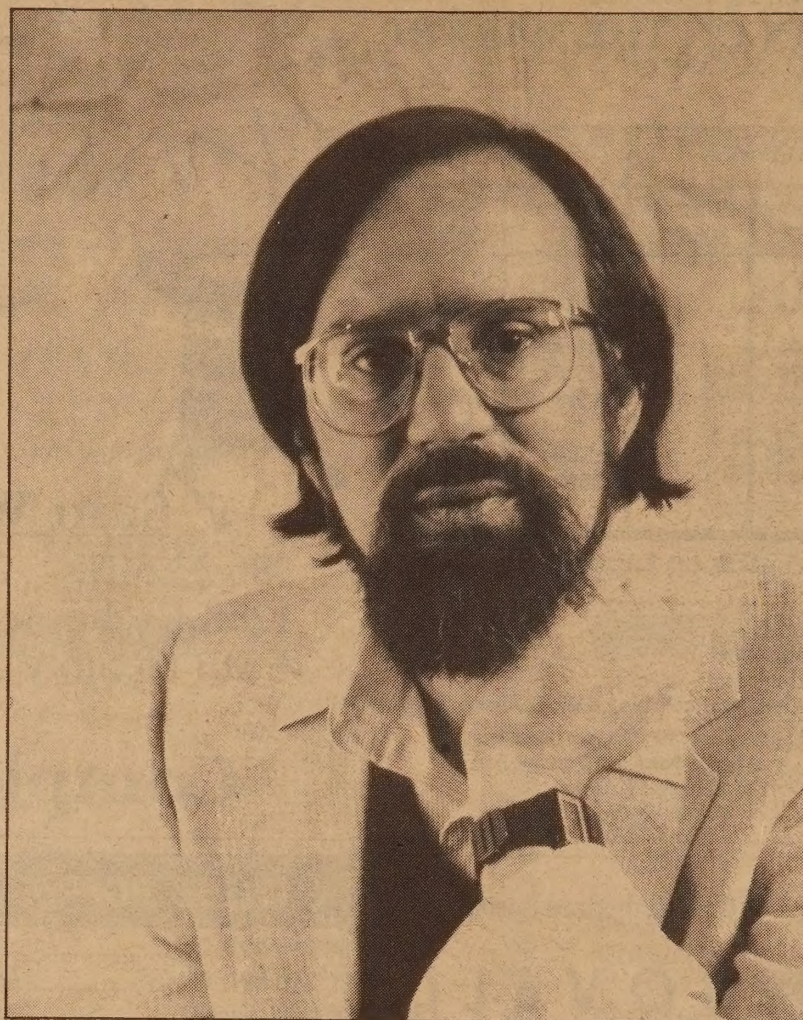
Deluxe Paint 3 and other delights.

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Cover and Contents Photo: Michael Jay

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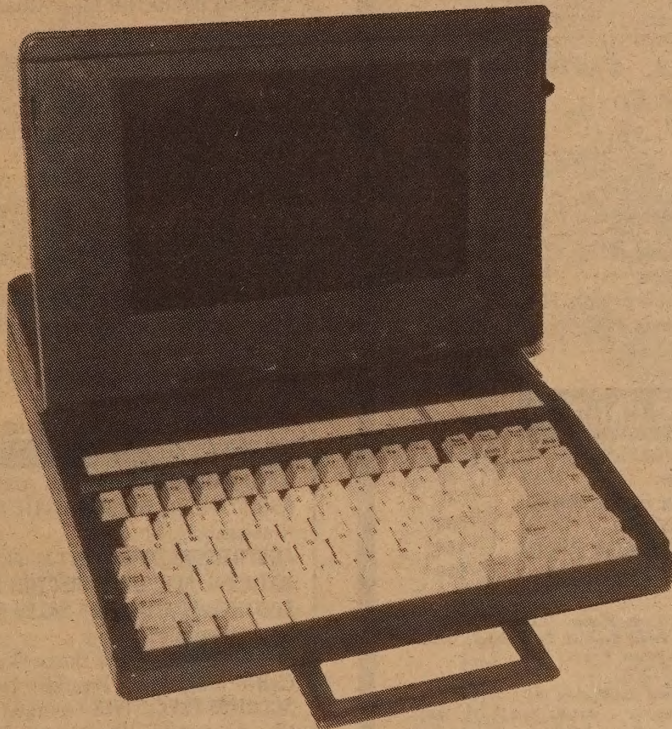
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Bilingual questionnaires in *HyperCard*

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Announcing The Next Generation Of Battery Powered 286 Laptop Systems Mitsuba's *Ninja-12*



Ninja-12

- 12 MHz 80286 Microprocessor
- 5 Hour Battery Usage
- 20 Megabyte 27mSec Conner Hard Disk
- 8" x 6" Cold Cathode Florescent Tube
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Expandable to 5 Megabyte EMS

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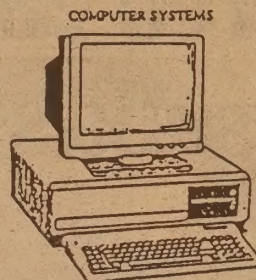
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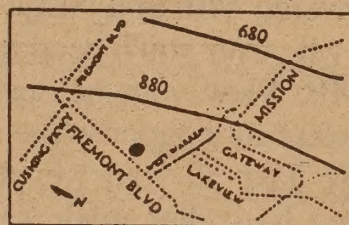
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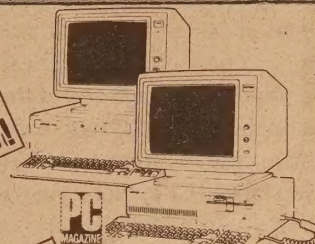
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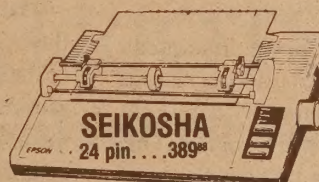
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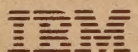
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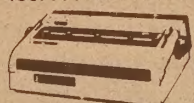


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LETTERS

Wise Shoppers Read MicroTimes

After perusing over 20 computer magazines and shoppers (from *BYTE* to *Infoworld*) I found the best deal in *MicroTimes* and put my money where my mouth was—bought from the International Computer Center (page 164 of the mid-December issue) a Toshiba 1200FB with case for \$1447. Which hot little upgrade from a T1000 (which I am letting my son take to China for a year, with modem) now will be my staple. With fingers crossed, doing that much by mail order, paying by cashier's check in advance, I bit my nails for the week till it arrived in fine shape.

So *MicroTimes* garnered a few \$\$\$ for one of its advertisers from out of state from me.

Dave Hughes

Old Colorado City Communications
Colorado Springs, CO

Those familiar with the many exploits of Dave Hughes in the telecomm universe will be gratified to know that he insisted we note that we received this letter electronically via The WELL...

In more recent weeks, he's turned his attention to bringing the Colorado state legislature into the Information Age, a campaign in which the selfsame Toshiba with which he's so pleased plays a significant role. Stay tuned...—eds.

MicroTimes Gets The Word Out

I am writing to thank you for including our course listings in your Calendar of Events. Our phone rings constantly with people who have seen your calendar. It's a big boost to our non-profit Macintosh training lab. This is our first year of offering classes and we can't afford much advertising. With the help from *MicroTimes*, we're making great progress. Our main effort is to help struggling non-profits, and your assistance is proving to be a major source of help.

Lee Haskell

Maclab Director
Computer Alliance
San Francisco

Viruses? Just Say No...

I have been reading various articles and opinions on so-called "computer viruses." Some are technical in nature and try to explain means of protection or prevention. Others take a documentary tone and outline or define what the various types of infection do and how they differ. Still others are an experiment in the gullibility of readers and a test of patience for those of us who prefer civilization to anarchy.

I don't care whether you call it a virus, Trojan horse, worm, or plain old sabotage; the destruction of vital data is, to the business world and the people who must survive in it, what bacteriological warfare is to humanity. It is the mass murder of our collective computerized productivity, a deliberate abandonment of civilized decency and a low form of depraved behavior. Anyone who can sit and

Computer sabotage is not an exercise in artificial intelligence. It is not the first form of man-made life. Viruses are not examples of programming genius any more than random murder is a clever trick to play on strangers.

giggle in the dark over the loss of hundreds of thousands of hours of work or the destruction of vital irreplaceable information must be devoid of conscience and capable of almost any atrocity. Destroying important data is like draining the blood of civilization. It is a singular example of meanness and cowardice because the culprit does his mayhem from a safe remote location and also at random.

Computer sabotage is not an exercise in artificial intelligence. It is not the first form of man-made life. Viruses are not examples of programming genius any more than random murder is a clever trick to play on strangers.

As a weapon, computer terrorism compares with the use of gas or nuclear arms. It is an act so immoral and randomly destructive that the civilized nations will not use it as anything but a last resort. In the civil world of arts and sciences, the destruction wreaked by viruses can mean the loss of years of research and the ruination of many livelihoods.

The acceptance of the virus as a necessary stage in the evolution of computers is another terrible sign of decay. If we react to computer sabotage with the same incompetent laxity with which we treat the drug invasion and our educational decline, it will be another sure step in the path toward a new dark age.

Bill Copenhagen
Richmond

Revenge Of The Nerds

On a recent trip to the Silicon Valley, I came upon the March 20th issue of your magazine. It is truly a heavyweight...and enjoyable.

I feel compelled to comment on the "Nerd" article by John Dvorak. I have enjoyed his writing in a number of publications. However, while your "author's background" points to Mr. Dvorak's academic accomplishments, it seems obvious that his major was not history.

The period 1900-1950 truly was a period of great advances and inventions, but Mr. Dvorak's clock appears to be running on other than 60 hertz. Case in point: the automobile was invented prior to 1900. Also, rockets have existed for centuries. And Neil Armstrong might be surprised that someone beat him out by more than a decade.

Please excuse me now. Where did I leave my pocket protector and dark-rimmed glasses?

John C. Sak
N. Royalton, OH

Refugees From The Zone

I want you to know what a joy it was to read "Fear And Loathing At COMDEX" by Rev. John Perry Barlow in your January 23rd issue. I found the piece to be an exceptionally witty article about subjects we take too seriously much of the time. As I revelled in the humor, I kept hoping I'd see a similar review of Macworld [Expo], but alas, since moving away from the Bay Area in October, I have not been able to pick up a copy of *MicroTimes*.

Thank you for bringing the Reverend to print, and I look forward to your bringing *MicroTimes* to Seattle!

Dick Veldhuis

Kent, WA

Lest this letter set off a spate of rumors, we somewhat regretfully note that Mr. Veldhuis's proposed MicroTimes Seattle edition is strictly vaporware.

—eds.

Thank you for publishing the hilarious piece on COMDEX by the Very Rev. John Perry Barlow. However, should we be *that* surprised at the plump institutionalization of the PC industry? Have we not seen the same decline in Rock Music (and possibly in Entertainment and Satire, indeed in any human activity that attracts the cash nexus)? Can you get John to cover the next Usenix conference? The last one in San Francisco, in spite of being held at the Hilton, had much of the ambience of a Grateful Dead concert. Programmers, like musicians, are still having fun, even if their agents are wearing socks, ties, and frowns.

Stan Kelly-Bootle

Mill Valley

Mr. Kelly-Bootle is a contributing editor to UNIX Review and Computer Language, as well as the author of The Devil's DP Dictionary, published by McGraw-Hill.—eds.

I found Rev. J.P. Barlow's article "The Empire Strikes Back" [April 1989] to be a welcome surprise, humorous, and bottom-line (e.g., his views on "The Zone" and TV). Yeah! More articles like this! And more at-length news of other "hackers"!

Lillian Koponen

San Francisco

My highest commendations for Rev. John Perry Barlow for some of the best articles I have ever read.

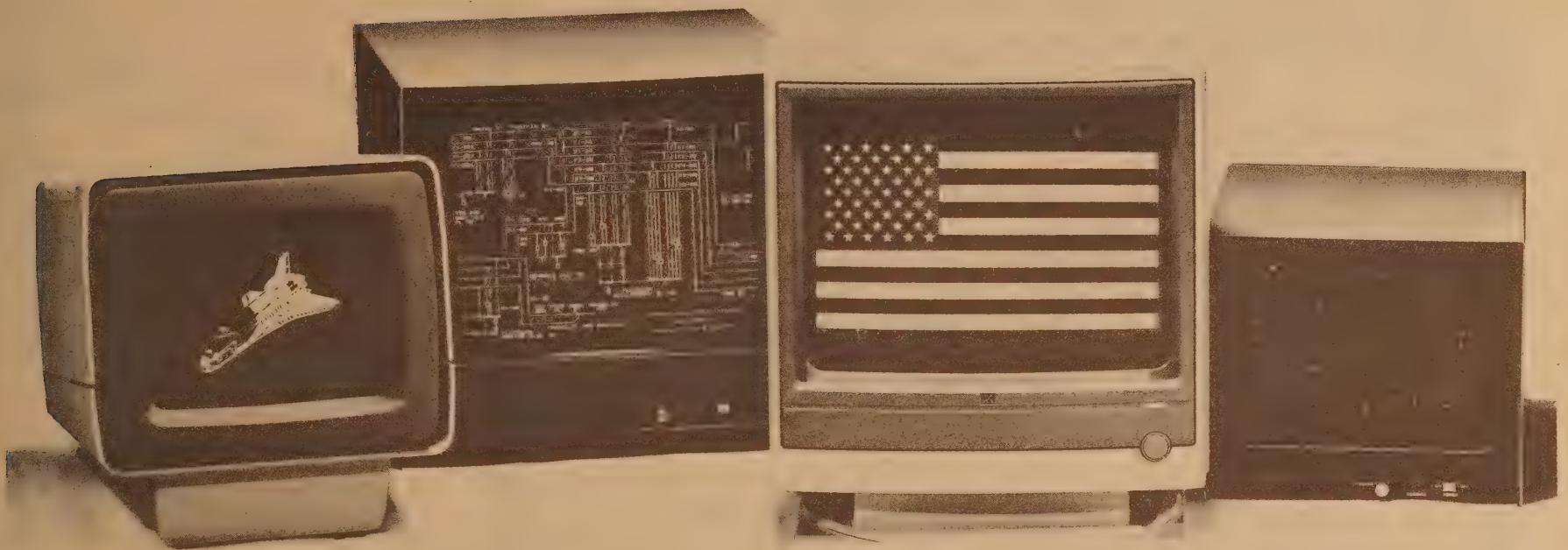
For over two years now I've been trying to cope with "bizdroids" in my daily passages in and out of "The Zone." People in major corporations who sit me down at an XT to do text and graphics without a graphics card. Supervisors and managers who exit applications by rebooting, and have strokes if I dare mention creating a RAM disk, installing a cache, or optimizing their hard disk. Supervisors who ask me, "Now how do I get back to the main menu?"

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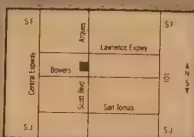
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others in "The Zone"? I used to feel tinges of guilt. "Compromise," a voice would say. "Be like them, at least for only eight hours a day."

But I can't. I won't. And I want to thank you, John, for your material. When doubt tries to seep in, your writing reassures me that I'm not alone and that IT'S NOT ME, IT'S THEM... The "hollow men" (and women) who not only hear, speak, and see no "Evil," but just plain don't hear, speak, or see. Period. Don't be creative, don't get fancy, don't get technical, don't touch, don't think, don't suggest. Just produce. And don't dare tell them they're doing things wrong. That's very bad for job security.

Thanks again. And thank you, *MicroTimes*, for being bold enough to publish material so "dangerously leftist." Substance far bypasses packaging, and puts *MicroTimes* at the top of my computer magazine list. And to the "Bizdroids" suggesting "disclaimers(!)", how about leaving the pervasive corporate paranoia at the office?

Rick Zingale
San Francisco

Even More Foreign Characters

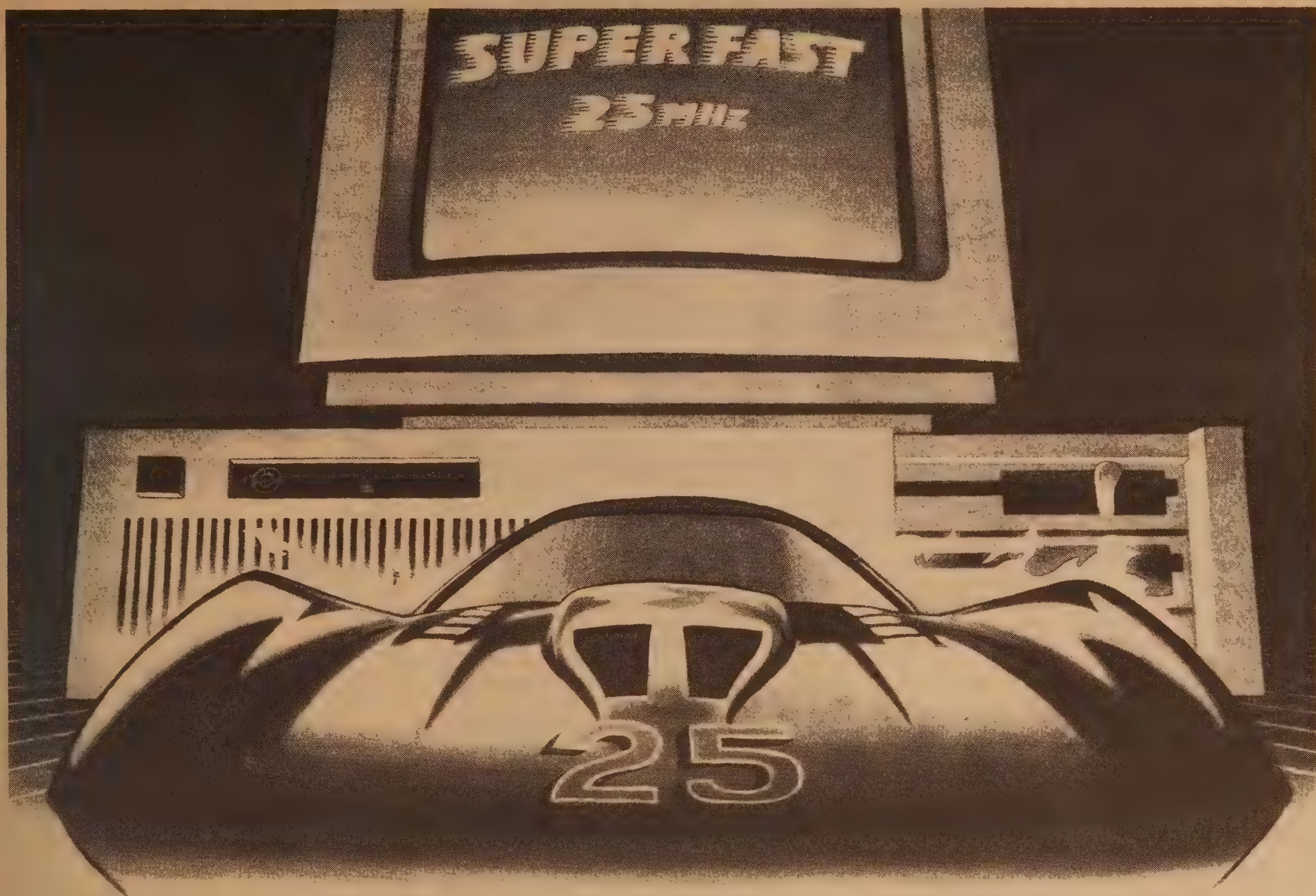
Re your reply to Robert S. Walker about foreign characters on the Mac (March 20, p. 12), you are both right and wrong: the Mac does indeed handle these easily using the fonts that come with it (and the method shouldn't be "little-known"—it's right there in the System Software User's Guide, p. 165)—but many commercially available fonts can't handle them at all. This means that not only can one not write in foreign languages, but even common loan words like "première," "café," "rôle," "façade," "señor," and "Noël" are off-limits. How the producers expect to market the stuff in Europe, or even to American Hispanics, is a mystery, and it's this sort of thing that contributes to the reputation for amateurishness that Mac software has among the IBM community.

For this reason, anyone laying out their bread for fonts should check that they do indeed have all the characters they need.

Incidentally, even the native Mac fonts are lacking the upside-down circumflex that characterizes such words as "Dvorak." Presumably they don't sell Macs in Czechoslovakia.

Paul Magnussen
Walnut Creek

Letters are heartily encouraged. Send US Mail to Letters, *MicroTimes*, 5951 Canning Street, Oakland, CA 94609, and faxes to (415)652-4618. Send email to microx on The WELL (415/332-6106), {pacbell, hplabs, ucbvax, apple}!well!microx from Usenet, bex754 on The Source, and *MicroTimes* on MacNET. Please include your real name and the city where you live; we will not print anonymous letters.



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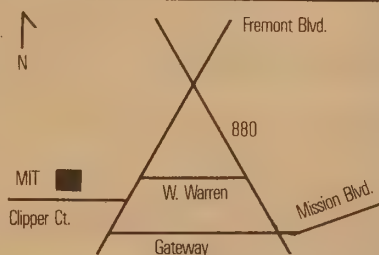
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May 12 I-CUE General Meeting: Teacher To Software Developer. Menlo Park. Computer Using Educators. Call: Bob Enenstein, (415)969-4679.

May 12 Managing Computer Resources Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 12 Microsoft Word Part 2 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 13 De Anza Computer Mart. Cupertino. De Anza College. Call: (408)996-4350.

May 13 Lotus 1-2-3 Made Simple Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 13 Shop Till Ya Drop Computer Swap. Alameda. Richard James. Call: 433-7469.

May 13 System Administration: Managing A Novell Network Class. Oakland. DATAassociates. Call: (415)465-9083.

May 15 dBASE Programming Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 15-17 Export Pacific '89 Exhibition And Conference. San Francisco. Meridian Pacific Group. Call: (415)381-2255.

May 15 HyperCard Part 2 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 15 Lotus 1-2-3 Made Simple. San Francisco. Micro Applications. Call: (415)863-4490.

May 16 Advanced MS-DOS Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 16 Artists Turning Process Into Pattern Forum. San Francisco. Ylem: Artists Using Science And Technology. Call: Trudy Reagan, (415)856-9593.

May 16 Flyers And Brochures With Ventura Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 16-19 Image Processing & Machine Vision Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 16 Introduction To WordPerfect Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 16 OOP SIG Meeting. Mountain View. Software Entrepreneur's Forum. Call: Dean Ritz, (415)859-1043.

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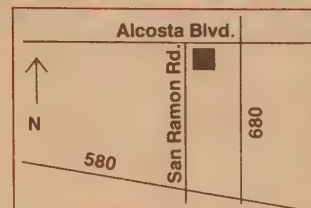
GRAND OPENING

OF COMPUTER OUTLET

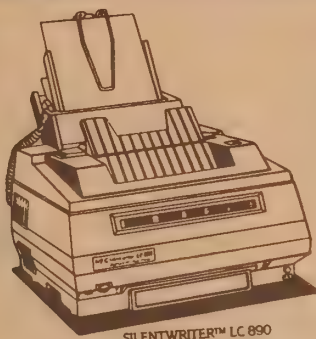


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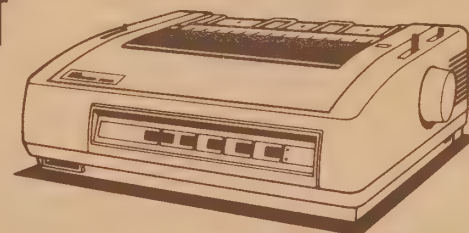
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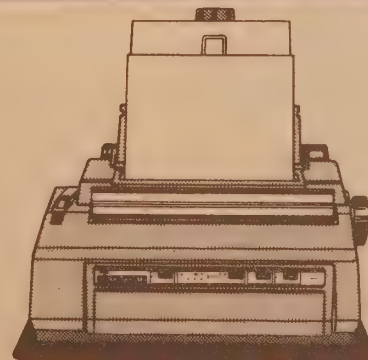
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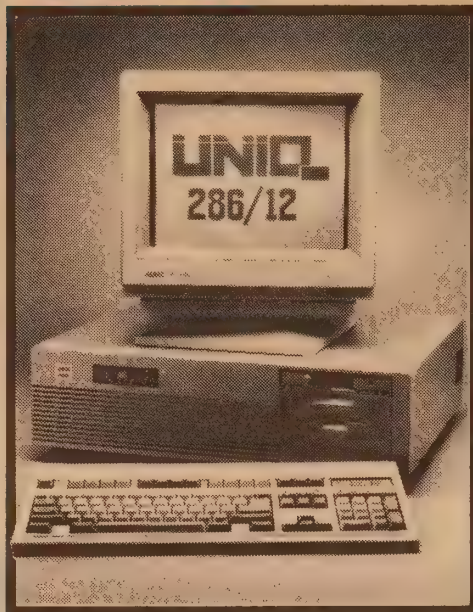
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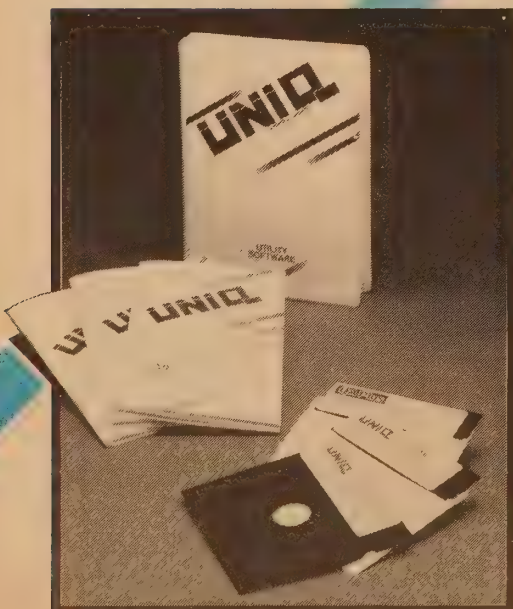
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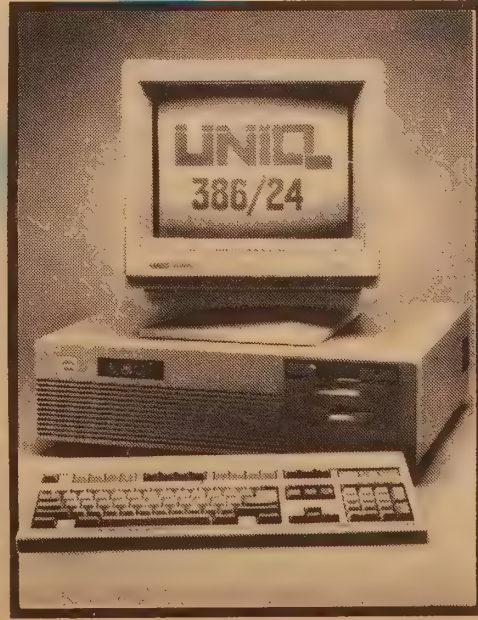
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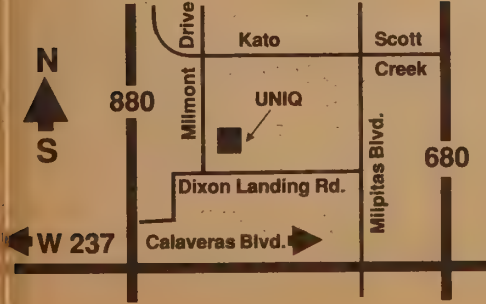
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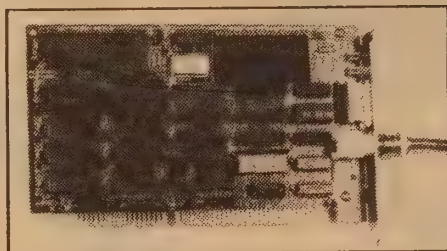
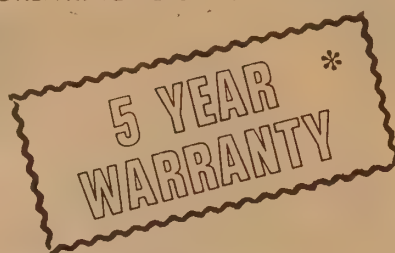
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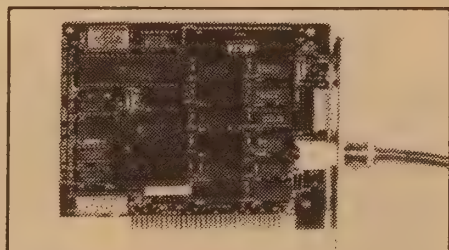
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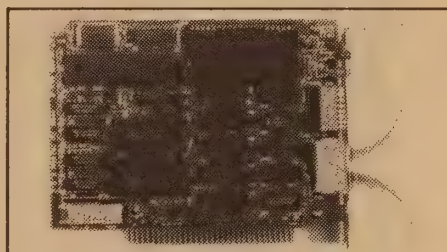
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May 16 What Text Management Is Seminar. San Francisco. Infodata Systems, Inc. Call: Michelle Sherwood, 1-800-336-4939.

May 17 Advanced Lotus 1-2-3 Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 17 Basic Macintosh Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671.

May 17 How To Successfully Automate Your Business Accounting System Seminar. San Francisco. J.C. Lukrich & Company. Call: (415)864-6770.

May 17 Introduction To MS-Word Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 17 Microsoft Word Part 2 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 18 Advanced dBASEIII+ Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 18 CD-ROM Developers Seminar. San Jose. Meridian Data, Inc. Call: (408)998-1900.

May 18 Computer Seminar: Real Estate Management. San Francisco. Howard M. Haberman Associates. Call: (415)641-0850.

May 18 Fundamentals Of PageMaker Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 18 Introduction To MultiMate Advantage Word Processor Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 18 PageMaker Part 2 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 18 SEF Meeting. Palo Alto. Software Entrepreneurs' Forum. Call: Barbara Cass, (415)854-7219.

May 19 Expert System Design And Management Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 19 Introduction To WordPerfect Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 19 LAN Essentials: Installation & Configuration Class. Oakland. DATAAssociates. Call: (415)465-9083.

May 20 Building An Unassailable Unfair Advantage. Santa Clara. Silicon Valley Entrepreneurs Club. Call: (408)562-6040.

May 20 dBASE deMystified Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 20 How To Buy Micro's Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 20 LAN Maintenance: Troubleshooting And Diagnostics Class. Oakland. DATAAssociates. Call: (415)465-9083.

May 20 Shop Till Ya Drop Computer Swap. Alameda County Fairgrounds. Microshows. Call: 1-800-433-7469.

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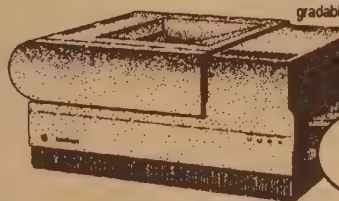
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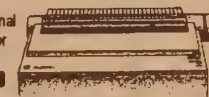
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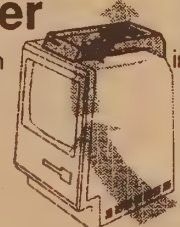
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As a manufacturer, PC Craft is proud to offer its own fileserver. As a distributor, PC Craft is equally proud to offer a complete selection of LAN and Multi-User environment peripheral products from solid, yet cutting-edge companies.

LAN And Multi-User Fileserver Price/Performance Comparison

	PC CRAFT "FlexBase"	ALTOS 1204	UNISYS PW2 800/20	ACER S-32/20
System Overview	2MB RAM 8 RS232 ports 70MB MFM hdd 1.2MB fdd mono card/monitor	2MB RAM 2 RS232 ports 40MB SCSI hdd 1.2MB fdd	1MB RAM 2 RS232 ports 1 parallel port 40MB MFM hdd 1.2MB fdd EGA card/monitor	2MB RAM 2 RS232 ports 1 parallel port 100MB ESDI hdd 1.2MB fdd EGA card/monitor
CPU/Speed/Cache	80386 25MHz, 0 wait 64KB to 256KB	80386 16MHz, 0 wait 32KB	80386 20MHz, 0 wait no cache	80386 20MHz, 0 wait no cache
Price as Configured	\$7780	\$7650	\$6889	\$8475
Price of Unix OS	\$795 Xenix/386 + SCO Manager	\$1000 Xenix/386	\$695 Xenix/386	\$695 Xenix/386
Max. Motherboard RAM	8MB	4MB	1MB	n/a
No. of Expansion Slots	two 8-bit four 16-bit one 32-bit	two 16-bit two prop. RAM	two 8-bit four 16-bit one 32-bit	two 8-bit five 16-bit
Max. Internal Drives	6 hlf-ht + 2 full-ht or 10 hlf-ht.	2 hlf-ht + 1 full-ht or 4 hlf-ht.	3 hlf-ht + 1 full-ht or 5 hlf-ht.	2 hlf-ht + 2 full-ht or 6 hlf-ht.
Power Supply	350W	250W	194W	196W
Major Options (Factory Installed)	-40MB - 660MB hdd -intelligent cache disk controllers -60MB - 150MB tape drives -up to 3 add'l 8-port intelligent I/O boards	-40MB - 90MB hdd -intelligent cache disk controllers -150MB tape drives -up to 2 add'l 8-port intelligent I/O boards	-40MB - 116MB hdd -60MB tape drives	106MB - 380MB hdd -60MB - 150MB tape drives -up to 3 add'l 8-port intelligent I/O boards

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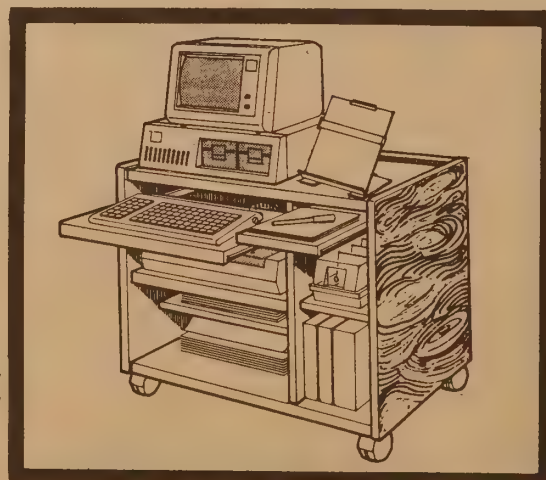
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May 22-25 Basic Project Management: Planning, Scheduling, And Control Information Meeting. San Francisco. American Management Association. Call: Vern Lautner, (212)903-8208.

May 22-24 CAD For Managers Short Course. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 22 dBASE deMystified Class. San Francisco. Micro Applications. Call: (415)863-4490.

May 22 HyperCard Part 3 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 23 Automating Your Accounting System With Solomon—See What It Can Do For Your Business! San Francisco. J.C. Lukrich & Company. Call: Beth Markus, (415)864-6770.

May 23-26 CASE: Computer-aided Software Engineering Hands-on Course. Los Angeles. Integrated Computer Systems. Call: 1-800-421-8166.

May 23 Computer Seminar: Real Estate Management. San Francisco. Howard M. Haberman Associates. Call: (415)641-0850.

May 23 EB CUE Annual Meeting: HyperCard And Other New Technologies. Computer Using Educators. Call: Melisa Alden, (415)547-3763.

May 23-26 Effective Skills For Technical Managers Course. San Francisco. Integrated Computer Systems. Call: John Valenti, (415)421-8166.

May 23 Making The Most Of Your PC Seminar. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 23-26 Microprocessor Troubleshooting: Hands-On Tools & Techniques Seminar. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

May 23-25 Systems Design & Networks Conference. Santa Clara. Computer Society Chapter Of Santa Clara Valley. Call: Kenneth Majithia, (408)256-4914.

May 23 US-USSR Trade Conference. San Francisco. Department Of Commerce/San Francisco Chamber Of Commerce. Call: (415)556-5860.

May 24 Advanced DOS Seminar. Oakland. DATAsociates. Call: (415)465-9083.

May 24 MDTA Meeting: Business Plans—Blueprints For Success. Walnut Creek. Mount Diablo Technology Association. Call: Deborah Scott, (415)932-4828.

May 25 CPA's Accounting Software Forum. San Francisco. J.C. Lukrich & Co. Call: Beth E. Markus, (415)864-6770.

May 25 DOS Power Users Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 25 Introduction To Microsoft Excel Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

May 25 Marketing SIG Meeting. Palo Alto. Software Entrepreneurs' Forum. Call: Don Morrison, (408)425-7222.

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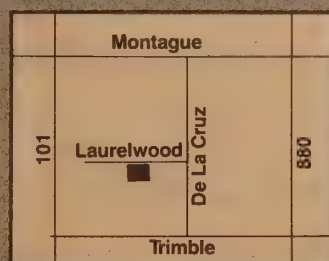
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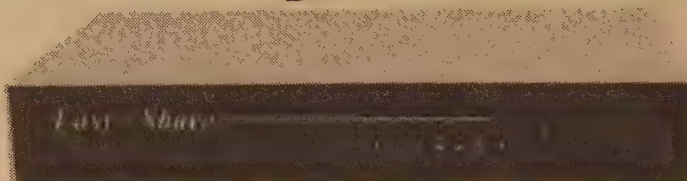


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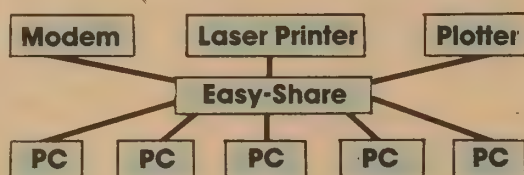
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May 26 System Administration: Managing A Novell Network Class. Oakland. DATAAssociates. Call: (415)465-9083.

May 27 Amiga Computer Animation Festival. San Francisco. Artists' Television Access. Contact: Craig Baldwin, 992 Valencia St., San Francisco, CA 94110.

May 27-28 AutoLISP Short Course. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 28 San Francisco Computer Show, Sale, And Swap. Fort Mason Center. Compu-Shows. Call: (415)931-0423.

May 30 Expert Lotus 1-2-3 Class. San Francisco. San Francisco State University Extended Education. Call: (415)338-1205.

May 31 Introduction To DOS Seminar. Oakland. DATAAssociates. Call: (415)465-9083.

May 31 Portable Computing '89. Santa Clara. International Data Group. Call: 1-800-225-4698.

June 3 Computer Show. Santa Clara. East-West Computer Show. Call: (415)388-8893.

June 3 LAN Essentials: Installation And Configuration Class. Oakland. DATAAssociates. Call: (415)465-9083.

June 3 Shop Till Ya Drop Computer Swap. San Mateo. Richard James. Call: 1-800-433-7469.

June 3-5 Showbiz Expo. Los Angeles. Live Time, Inc. Call: (213)668-1811.

June 4 Computer Show. Vallejo. East-West Computer Show. Call: (415)388-8893.

June 4-8 Computer Vision And Pattern Recognition Conference. San Diego. The Computer Society Of The IEEE. Call: Dr. Rama Chellappa, (213)743-8559.

June 5-8 1989 AIIM Show And Conference. San Francisco. Association For Information And Image Management. Call: (301)587-8202.

June 5-9 Conference On Distributed Computing. Newport Beach. The Computer Society Of The IEEE. Call: Kane Kim, (714)856-5542.

June 5 Introduction To Telecommunications Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 5-8 Symposium On Logic In Computer Science. Pacific Grove. The Computer Society Of The IEEE. Contact: Prof. Albert Meyer, MIT, 545 Technology Square, Cambridge, MA 02139.

June 5 Workshop On AI For Computer Vision. San Diego. The Computer Society Of The IEEE. Call: (213)743-8559.

June 6 Basic Macintosh Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 6-9 Computer Network Architectures & Protocols Course. Palo Alto. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 6 How To Successfully Automate Your Business Accounting System. San Francisco. J.C. Lukrich. Call: Beth Markus, (415)864-6770.

June 6 Introduction To MS-DOS Class. San Francisco. Micro Applications. Call: (415)863-4490.

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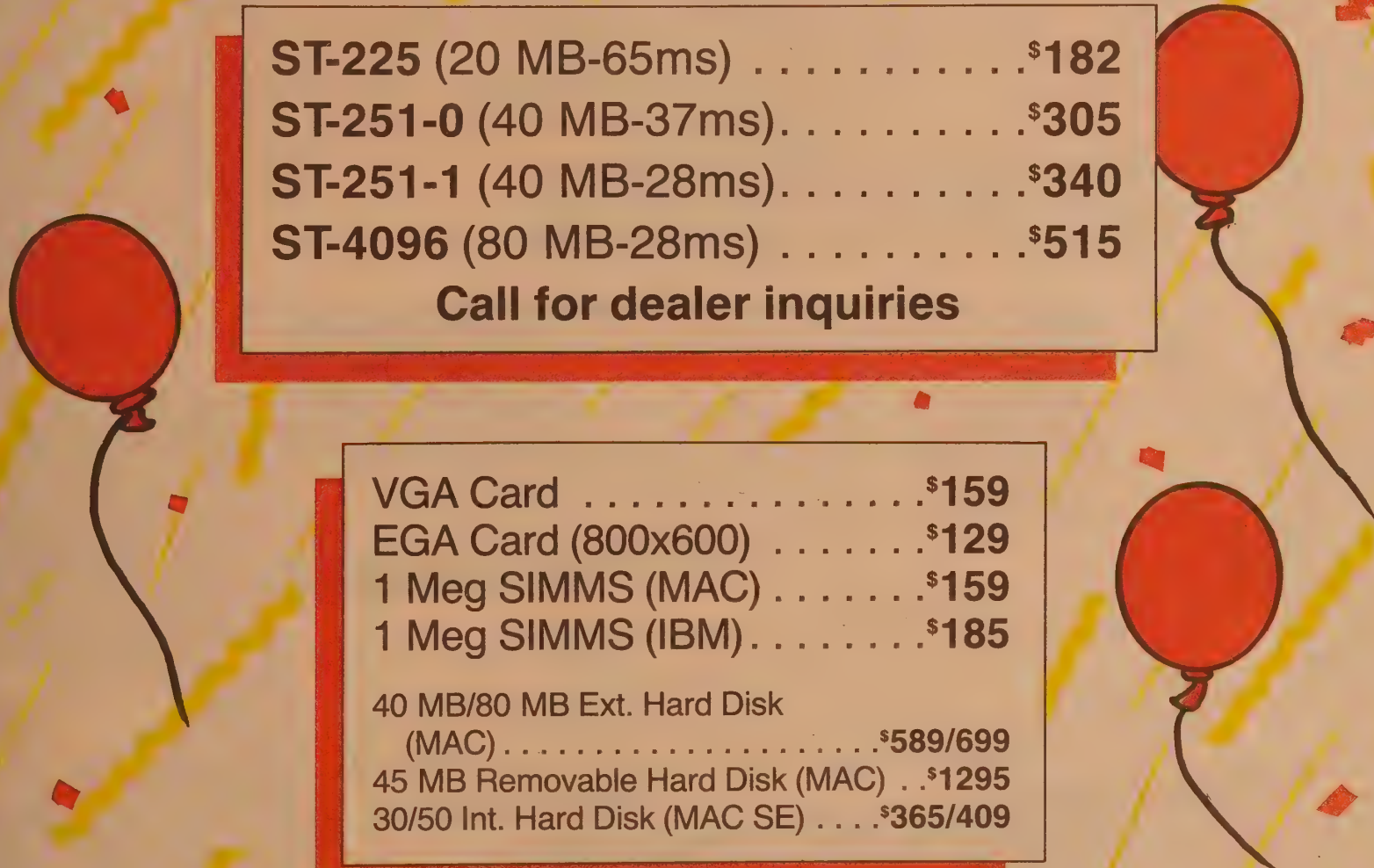
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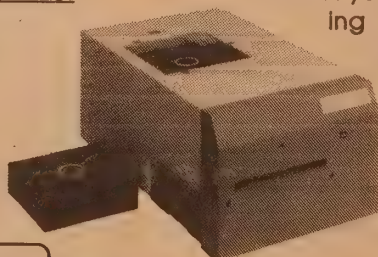
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CALENDAR OF EVENTS *continued*

June 6 Microsoft Word Part I Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 7 Advanced DOS Class. Oakland. DATAAssociates. Call: (415)465-9083.

June 7 Fundamentals Of PageMaker Class. San Francisco. Micro Applications. Call: (415)863-4490.

June 7 Intelligent Mapping '89: Focus On Desktop Mapping. Anaheim. Geographic Information Systems. Call: 1-800-882-2058.

June 7 PageMaker Part 1 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 8 Introduction To dBASE III+ Class. San Francisco. Micro Applications. Call: (415)863-4490.

June 8 Producing Your Newsletter On The Macintosh Workshop. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 8-9 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

June 9 MS-DOS Survival Skills Class. San Francisco. Micro Applications. Call: (415)863-4490.

June 10 Shop Till Ya Drop Computer Swap. San Jose. Richard James. Call: 1-800-433-7469.

June 10 System Administration: Managing A Novell Network Class. Oakland. DATAAssociates. Call: (415)465-9083.

June 11 Clipper Developers Conference. Los Angeles. Nantucket Corporation. Call: 1-800-848-CLIP.

June 11 Computers, Cameras, And Video Swap And Sale. Alameda. Call: Fred Long, (415)522-3336.

June 12-16 USENIX Technical Conference And Exhibition. Baltimore. The Professional And Technical UNIX Association. Call: (714)588-8649.

June 13 Basic Macintosh Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 13-16 Computer Graphics: Software Techniques & Hardware Components Course. San Francisco. Integrated Computer Systems. Call: 421-8166.

June 13 Microsoft Word Part I Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 13-16 Troubleshooting Datacomm & Networks: Hands-on Workshop. Palo Alto. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

June 14 HyperCard Part 1 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

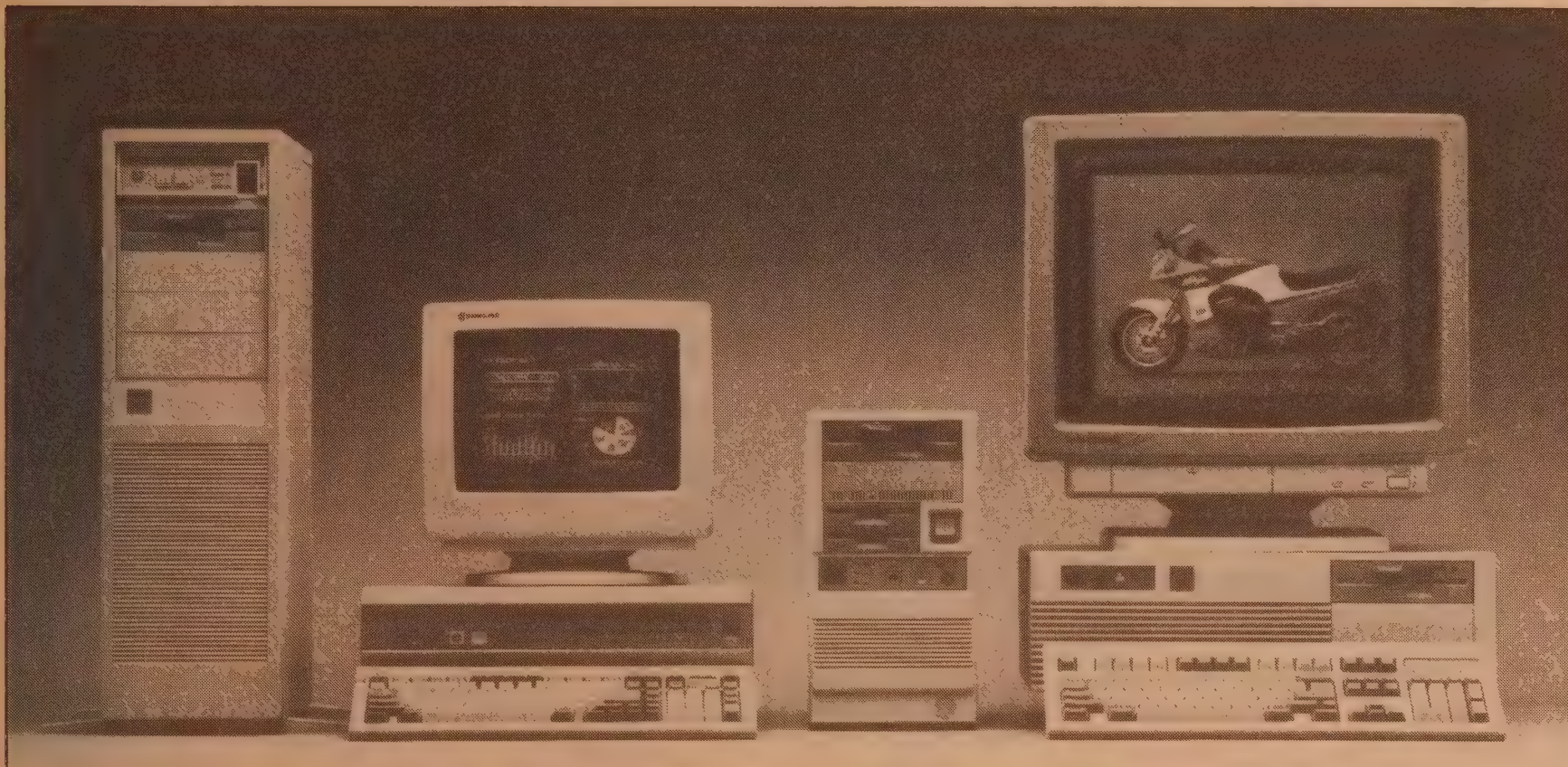
June 14 Introduction To DOS Seminar. Oakland. DATAAssociates. Call: (415)465-9083.

June 14-16 MacHack '89. Ann Arbor, MI. University of Michigan. Call: (313) 665-4444.

June 15 Microsoft Word Part 2 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

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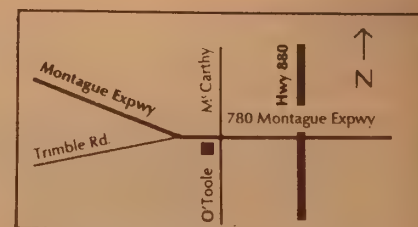
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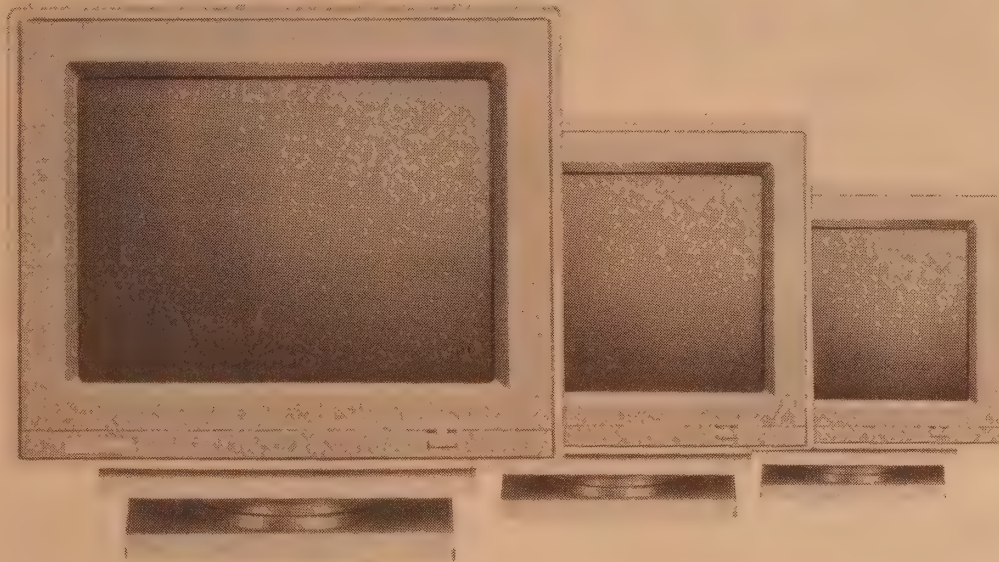
- June 15 PageMaker Part 1 Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 16 LAN Essentials: Installation & Configuration Class.** Oakland. DATAAssociates. Call: (415)465-9083.
- June 17-18 Amiga Festival.** San Francisco. East-West Shows. Call: (415)388-8893.
- June 17 De Anza College Computer Mart.** Cupertino. De Anza College. Call: (408)996-4581.
- June 17 LAN Maintenance: Troubleshooting And Diagnostics Class.** Oakland. DATAAssociates. Call: (415)465-9083.
- June 17 Shop Till Ya Drop Computer Swap.** San Francisco. Richard James. Call: 1-800-433-7469.
- June 18 Computers, Cameras, And Video Swap And Sale.** Alameda. Call: (415)522-3336.
- June 18-22 NETRON/CAP Development Center Users' Conference.** Toronto. Netron, Inc. Call: Bill Daverne, (415)636-8333.
- June 19 PageMaker Part 1 Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 19-20 Time Line 3.0 Workshop.** San Francisco. Symantec. Call: (415)898-1919.
- June 20-23 Am29000 RISCµP Embedded System Programming Class.** Sunnyvale. Advanced Micro Devices. Call: (408)749-2325.
- June 20-23 C Programming Hands-on Workshop.** San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.
- June 20 Introduction To Microsoft Excel Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 20 Microsoft Word Part 2 Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 21 Advanced DOS Class.** Oakland DATAAssociates. Call: (415)465-9083.
- June 21 HyperCard Part 2 Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 21-24 Independent Computer Consultants Association's Annual Conference.** San Diego. ICCA. Call: 1-800-GET-ICCA.
- June 21 MDTA Meeting: Adam Osborne Speaks.** Walnut Creek. Mount Diablo Technology Association. Call: (415)932-4828.
- June 22 PageMaker Part 2 Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 23 Basic Macintosh Class.** Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671
- June 23-25 Eggzibition '89.** San Francisco. Egghead Discount Software. Call: 1-800-EGGHEAD.
- June 23 System Administration: Managing A Novell Network Class.** Oakland. DATAAssociates. Call: (415)465-9083.

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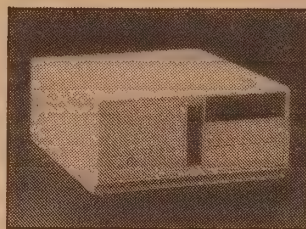
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June 25 Computers, Cameras, And Video Swap And Sale. Alameda. Call: (415)522-3336.

June 25 San Francisco Computer Show, Sale, And Swap. Fort Mason Center, San Francisco. Computer Shows. Call: (415)931-0423.

June 25-28 Xhibition '89. San Jose. Integrated Computer Solutions. Call: (415)388-3777.

June 26 PageMaker Part 2 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 27 Automating Your Accounting System With Solomon—See What It Can Do For Your Business! San Francisco. J.C. Lukrich. Call: (415)864-6770.

June 27 Learning About Your Mac System And Hard Disk Seminar. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 27-30 Systems Engineering Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

June 28 HyperCard Part 3 Class. Fort Mason Bldg. D, San Francisco. Computer Alliance. Call: (415)771-1671

June 28 Introduction To DOS Seminar. Oakland. DATAssociates. Call: (415)465-9083.

July 2 Computers, Cameras, And Video Swap And Sale. Alameda. Call: (415)522-3336.

July 8 De Anza College Computer Mart. Cupertino. De Anza College. Call: (408)996-4581.

July 9 Computers, Cameras, And Video Swap And Sale. Alameda. Call: (415)522-3336.

July 10-12 Artificial Neural Networks Course. Techmart; Santa Clara. University of California Extension, Santa Cruz. Call: Institute in Computer Science, (408)429-4535.

July 11-13 The 1989 Desktop Presentation Graphics Conference And Exposition. Los Angeles. Cambridge Marketing. Call: 1-800-262-3378.

July 11-14 Writing Better Computer Software Documentation For Users Course. Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

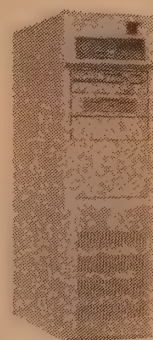
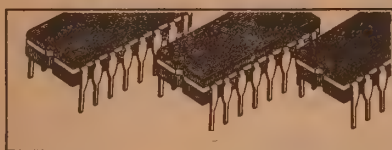
July 13-14 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

July 16 Computers, Cameras, And Video Swap And Sale. Alameda. Call: (415)522-3336.

July 16 San Francisco Computer Show, Sale, And Swap. Fort Mason Center, San Francisco. Computer Shows. Call: (415)931-0423.

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w/Pop-Up DOS	89

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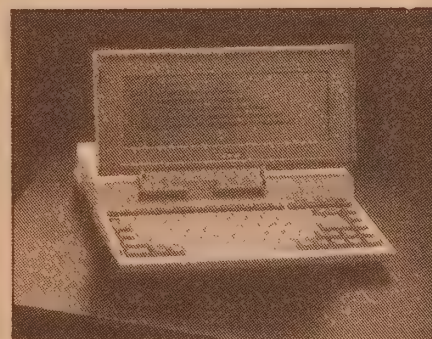
Casper Mono TTL 12"	\$71
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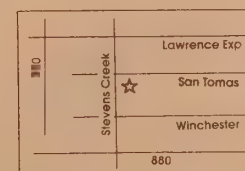
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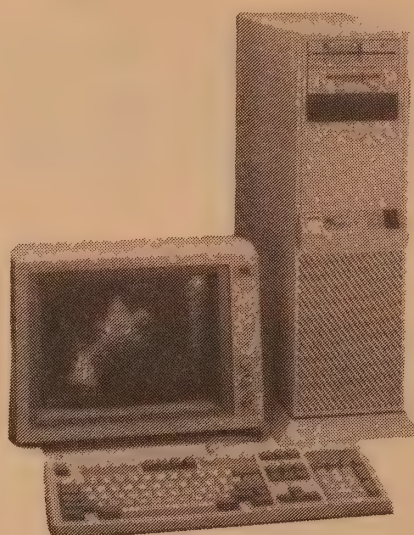
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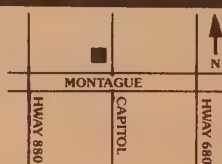
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July 18-21 UNIX Hands-on Workshop. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

July 20-21 An Introduction To 4.3BSD UNIX Networking Internals Course. Techmart, Santa Clara. University of California Extension, Santa Cruz. Call: (408)429-4535.

July 21 MDTA Meeting: Yes, You Can LAN. Walnut Creek. Mount Diablo Technology Association. Call: (415)932-4828.

July 23 Computers, Cameras, And Video Swap And Sale. Alameda. Call: (415)522-3336.

July 24-25 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

July 25-28 Software Project Management Tools & Techniques Course. San Francisco. Integrated Computer Systems. Call: 1-800-421-8166.

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July 26-28 Leadership For Technical Managers Course. San Francisco. Integrated Computer Systems. Call: John Valenti, 1-800-421-8166.

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August 7-10 Advanced Project Management And Project Leadership Course. Santa Cruz. University of California Extension, Santa Cruz. Call: (408)429-4535.

August 10-11 Time Line 3.0 Workshop. San Francisco. Symantec. Call: (415)898-1919.

August 12 De Anza College Computer Mart. Cupertino. De Anza College. Call: (408)996-4581.

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SPEED/WAIT STATE	12MHz/0	10MHz/1	12MHz/0	8MHz/1	10MHz/1	10MHz/0	12MHz/0	16MHz/0	16MHz/0	20MHz/0	25MHz/0
KBRD SWITCHABLE	YES 8MHz	YES 8MHz	YES 8MHz	NO	YES 8MHz	YES 8MHz	YES 8MHz	YES 8MHz	YES 8MHz	YES 8MHz	NO
RATINGS											
Norton SI	N/A	9.8	13.7	7.7	9.8	11.2	13.7	18.4	22	22	28.5
Mips	N/A	1.21	1.7	0.96	1.21	1.4	1.7	2.2	2.66	2.65	3.36
Landmark	N/A	5.2	8.45	4.1	5.2	6.8	8.4	12.3	N/A	13.6	N/A
INTERNAL											
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Controller	FLOPPY	1:1	1:1	REG	REG	REG	1:1	REG	1:1	1:1	1:1
Floppy Drive	360K	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB	1.2MB
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Power supply	150watt	200watt	200watt	200watt	200watt	200watt	200watt	200watt	200watt	200watt	200watt
Cache	NO	NO	NO	NO	NO	NO	NO	64K	NO	NO	64K
Clock	NO	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Ports	NO	1S/1P	NO	NO	NO	2S/1P	NO	NO	NO	2S/1P	2S/1P
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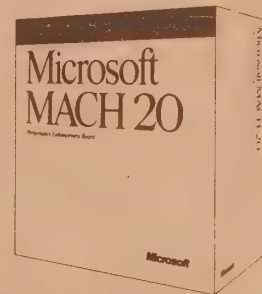
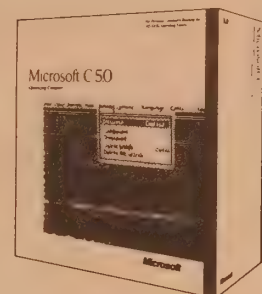
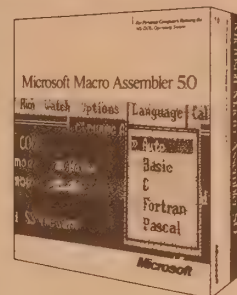
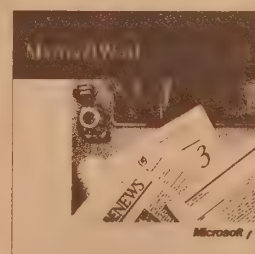
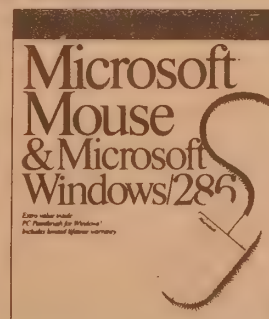
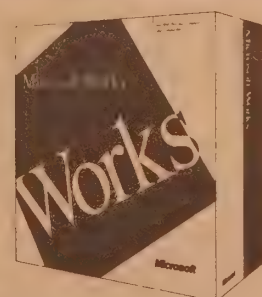
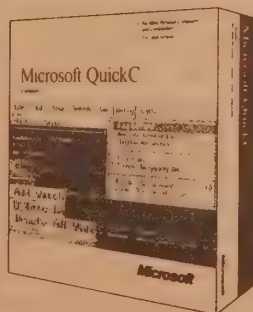
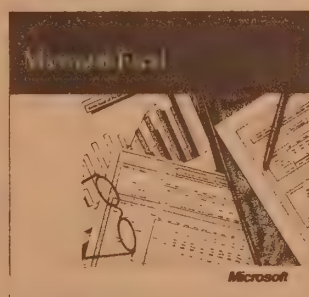
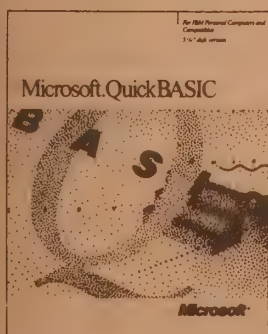
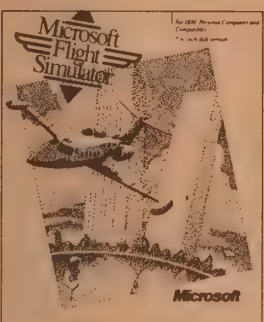
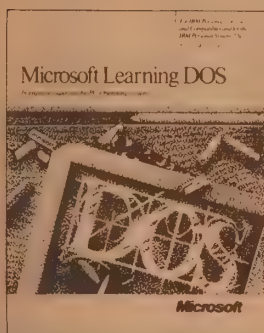
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Free Speech Is Where You Find It

Pakistani Airlines, Flight 1006—I'm en route to Afghanistan via Peshawar, Pakistan, to cover the war. It strikes me as odd that as I am about to romp through the Hindu Kush with 18th century warriors who routinely shoulder 20th century weaponry, the spectre of free speech haunts me even here.

As I write, the Afghan president, Nijibullah, has declared a state of emergency that has essentially stripped the citizens of Kabul of any and all basic human rights—foreign journalists notwithstanding.

The state of emergency suspends a series of constitutional rights, including protection against confiscation of property, freedom of expression, freedom of assembly and petition, freedom from compulsory labor, privacy of correspondence and telephone conversations, and foreign travel.

"That's all very interesting, Brock. But get to the point."

OK, OK. The point is, although you expect such drastic measures from a regime infamous for its human rights violations, you don't expect some of the same issues to play in the heartland of America. But they are. Welcome to the war.

Battleground 1990

The issues of free speech and search-and-seizure are under attack in the main streets of urban and suburban life: the shopping mall. It is a quirky kind of guerrilla war that is taking a heavy toll on the First Amendment rights of ordinary citizens.

And the connection with telecommunications is that bulletin boards and computer conferencing systems are the shopping malls and main streets of the 21st century. Such electronic systems are the digital metaphor to the analog world of validated parking and 103 stores under one roof. And free speech abounds, for now. But it might not later.

For example, in case after case, activist groups seeking to gain signatures from shopping mall patrons have been told that the activity is illegal. The shopping mall owners claim these groups are operating on private property and have no rights to carry out such activities without their approval.

"But surely these groups have taken legal action to protect their rights to exercise freedom of speech?" you ask.

Certainly they have. And with all the fervor such constitutional issues raise. But the courts have sided with the mall owners.

In 13 states bringing these issues before the Supreme Court, nine have favored the mall owners, finding that, according to their state constitution's provisions for free speech and related activities,

such as petitioning and passing out leaflets, the guarantee of free speech doesn't apply to malls.

Electronic Main Street

It seems improbable that someone could be sued for simply passing out copies of the Bill of Rights to passers-by. But it's happened. Ask Keenen Peck, a Milwaukee lawyer—he's been sued twice for doing just this at two different shopping malls. His crime: disturbing a place of business.

When Peck went to court, the courts sided with the shopping mall owners and basically told Peck, "Leave your constitutional rights in the car when you go shopping."

It's not a great mental leap to imagine a BBS sysop pulling the same type of action on an especially provocative user, say one that uploads copies of the Bill of Rights or text files urging the overthrow of the American government or revisionist holocaust "history" written by some hair-brained anti-Semitic group. Impossible, you say? No. And the similarities are scary. The shopping mall of the '80s replaces the broad, casual main street of yesteryear. Also gone is the "village green" where people used to congregate for anything from a Sunday picnic to an ad hoc concert. Shopping malls now play host to a score of community activities. BBSs and computer conferencing systems (especially those such as CompuServe and Prodigy) do the same.

For example: informal socializing, "under one roof" shopping, contests, all take place in shopping malls and on hundreds of electronic systems.

In shopping malls the owners exercise complete control of the "content" that gets presented to the patrons. The same applies to the electronic world: the sysop or system administrator completely controls content.

The shopping mall that sued Peck for distributing the Bill of Rights also sued a dance troupe for distributing anti-nuclear leaflets, yet the mall owners later allowed military recruiters to set up displays of military vehicles, such as armored personnel carriers. ("Look at the tanks, Daddy!")

The same type of action occurs on various computer conferencing systems. On CompuServe Information Services (CIS) system your rights of free speech are terminated as soon as you start to mention the benefits of a competing system. The system administrators of CIS see such activities as intrusions that they have a right to bar. After all, they say, CIS is private property.

"We pay for system upkeep and provide security," says a CIS spokesman. "If there's a problem or disturbance or disaster, we have to take care of it and pay for it. Certainly we have the right to decide what goes on our system and what does not."

To sharpen his point, the CIS spokesman noted, "There are plenty of free BBSes that people can use if they aren't happy with CIS."

But what if those sysops also decide to play the heavy hand? Is there any protection? (No.) Are we then destined to roam the ethernet looking for a sympathetic outlet for our discussions? (And thereby end up "preaching to the choir"? No thanks.)

In shopping malls the owners exercise complete control of the "content" that gets presented to the patrons. The same applies to the electronic world: the sysop or system administrator completely controls content.

In 1980, the U.S. Supreme Court deferred to the states on the issue of free speech in shopping malls. Bottom line for the courts: First Amendment doesn't protect speech in shopping malls—largely because its restrictions apply to the federal government and not to the owners of private property.

So, the big court cops out, but leaves this loophole: a state has the power to offer free speech protection in a shopping mall (or electronic system) if it chooses.

The California legislature lost a big opportunity to assure these rights when it dumped ACA-36 in the trash last year.

Round Two

California isn't the only state grappling with these issues, although it is the only state to attempt the electronic free speech issues.

In Washington the Supreme Court decided that malls function by design and purpose as community business centers, and that owners of property open to the public should have reduced expectations of privacy. (Recognize that last phrase? Memorize it—it's likely to become an anthem of free speech advocates.)

That decision upheld the rights of citizens to gather signatures in Washington shopping malls. Small victory. However, the court went on to say a mall owner has the right to "reasonably regulate" free-speech activities.

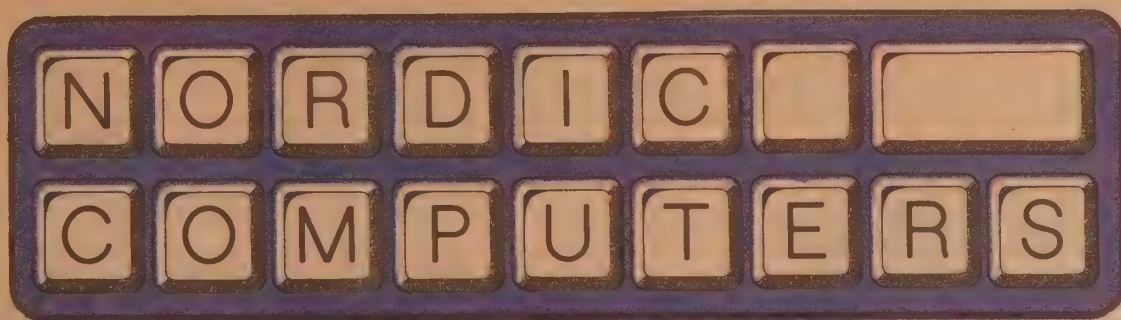
So, make sure you only exercise free speech in shopping malls where you know the political leanings of the owners.

Right.

In Wisconsin the high court likened shopping malls more to "old-fashioned department stores"



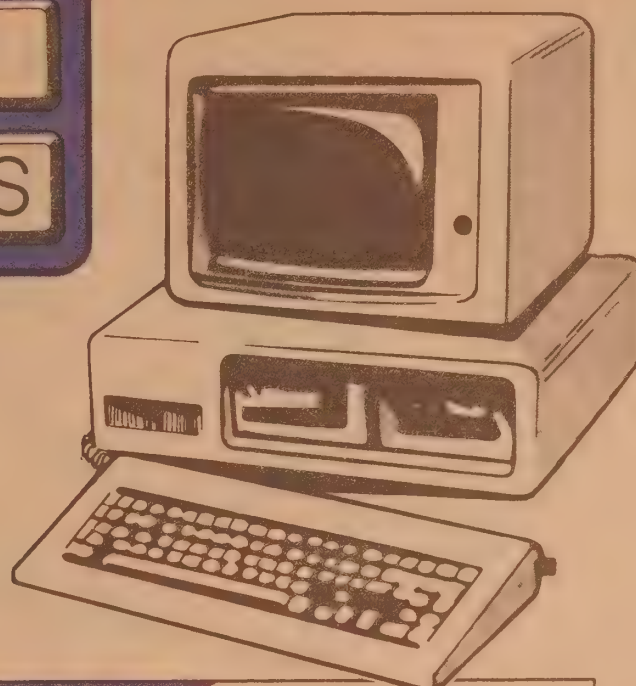
Copyright © 1989 by Brock N. Meeks. Brock Meeks is a San Francisco-based journalist. He's just completed an assignment for the San Francisco Chronicle in Afghanistan, where free speech is decided with a Kalishnikov, not a cursor.



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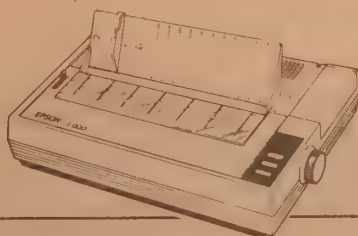
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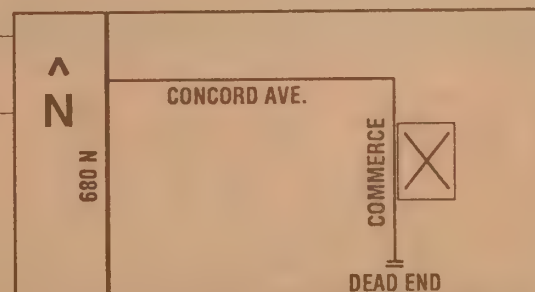
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After all, they say, CIS
is private property.**

than municipalities. According to the Wisconsin court, a shopping mall "concerns itself with one facet of its patron's lives—how to spend money." The court added, "Many other areas are more public and therefore more appropriate for the exercise of free speech."

If you didn't jump on that last sentence, you're not paying attention.

But what is "public?" Just how public are BBSes? How public are computer conferencing systems that charge for their services?

No one is exactly sure. Much hinges on the definition of the word "private." There is no single acceptable definition.

That means that a sysop or system can define the dos and don'ts in ad hoc fashion. One system says "No foul language here"; another system says, "No mention of other competing systems."

The procedure is fairly straightforward: you don't like the rules, take your cursor elsewhere. That seems acceptable, but why should I not be able to pay my money and speak as I want?

What happens when civic governments move more toward an online environment? What happens when electronic democracy becomes a reality instead of just grist for the columnist's mill?

What happens to free speech issues in those environments? Do we have to wait until the fight comes to our doorstep before we wake up and do something?

That's what's happening in shopping malls all over the country. People are fighting for free speech, trying to push through legislation. There isn't a lot of hope.

But in the electronic arena we don't have to wait. We can address the issue before it actually becomes an issue. And while we still have the right to do so.

And that's a right the some 15 million people below me, in Afghanistan, will never know. But they don't have a choice. You do. And the cursor's in your court. ■

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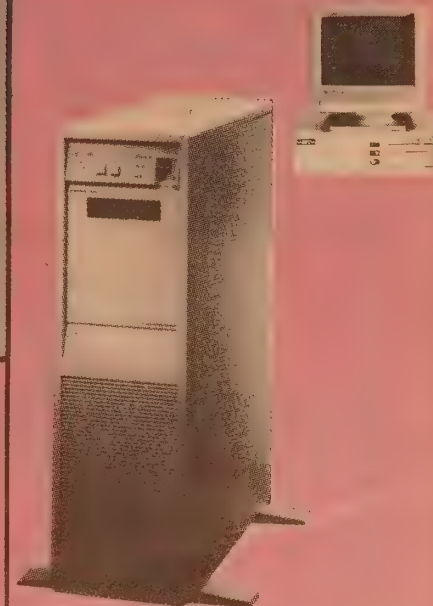
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NEWS AND ANALYSIS

BY PAUL HOFFMAN

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Paul Hoffman is an industry analyst who has been covering microcomputer technology for ten years. He can be reached on USENET (phoffman@well) and MCI Mail (264-3171). He also writes popular microcomputer books.

Workstations: H-P Acquires Apollo, Sun Unveils New Product Line, NeXT Goes To Businessland

Hewlett-Packard Acquires Apollo

Apollo Computer, which has recently lost a great deal of its workstation and network server market to faster-paced and higher-profile Sun Microsystems (see below), found a suitor to buy the company. Hewlett-Packard, one of the doyens of the Silicon Valley computer market, bought Apollo in a long-expected friendly takeover. The move gives Apollo more money with which to improve its products and access to H-P's extensive client base. At the same time, H-P gets a company known for inexpensive high-powered minicomputers and a great deal of software technology. The acquisition must be approved by federal regulators, although this should not be a problem since the move does not give H-P anything like a monopoly in the market.

H-P is buying Apollo for around \$550 million in cash, offering \$13.125 for 51% of the outstanding Apollo shares. H-P will float some short-term debt for the deal, but is not using the high-debt acquisition techniques that have been making the news lately in other industries. This is much higher than the \$8 a share at which Apollo has been trading in the last few months, but much lower than the perceived value of the company. Apollo's stock has been very depressed in the last year due to its loss of market share, even though current Apollo customers are quite loyal and satisfied with the manufacturer; in fact, Apollo traded for \$16 as little as a year ago.

Rumors about companies considering buying Apollo began to surface early this year, with some speculators thinking that H-P might be interested. However, H-P has never made such a large purchase, preferring to buy technology or smaller companies. The Apollo acquisition is likely to be H-P's only big corporate move this year, since H-P's management will need a fair amount of time to integrate Apollo's computers, personnel, and technology into H-P's many products.

The merger is friendly, although it is clear that Apollo will be swallowed by H-P. H-P's sales were almost \$10 billion last year while Apollo's were \$650 million; H-P's profit was \$800 million while Apollo's was \$2 million. Both boards of directors agreed to the merger, and many of Apollo's major clients were also happy to see the company get better financial backing than it had on its own. It is likely that Apollo will continue to use its name on its workstations and network products but will be called "Hewlett-Pack-

ard Apollo" to give it a cachet of respectability when dealing with current H-P clients.

The merger raises the stakes in the workstation market by giving H-P/Apollo almost the same size customer base as Sun. However, Sun remains in a much stronger position for the next year, especially after its product announcements that came on the same day as the merger announcement (H-P insists that the timing is coincidental).

H-P says that it hopes to merge the product line, although this is extremely difficult to do without estranging current customers of the two widely different products (even though both manufacturers use Motorola 68000 family CPUs). H-P's current workstation systems are more expensive and specialized than Sun's and Apollo's, and Apollo's have lagged behind Sun's

in advancing technology. Recent workstation buyers, especially those who have long experience with mainframes and high-end minicomputers, have been more interested in breadth of features and customizability than simply raw speed. This is why Sun was able to displace Apollo in the last two years.

However, now that Apollo will have H-P's acknowledged advanced manufacturing and engineering behind it, the new company may be able to catch up with Sun by committing more resources to these features. H-P will also gain valuable software technology from Apollo, giving its own workstations a big boost. On the other hand, it will take a fair amount of time for Apollo to get used to H-P's corporate culture, especially in after-sales support. Apollo is known for having strong technical service but weak technical marketing, while H-P is known for the opposite. As the two companies merge and begin sharing personnel and information, it is likely that both will improve and may become a very formidable force in the workstation market.

**The merger
raises the
stakes in the
workstation
market by giving
H-P/Apollo
almost the same
size customer
base as Sun.**

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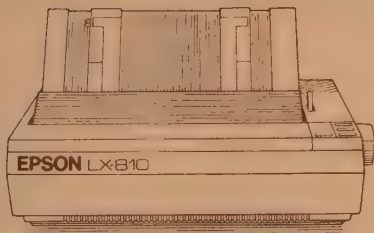
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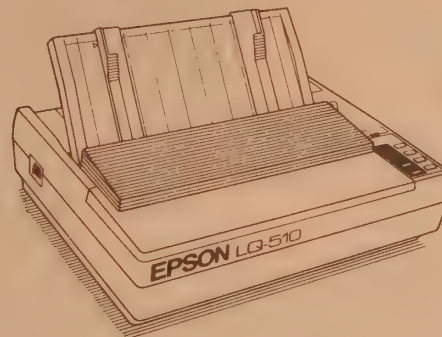
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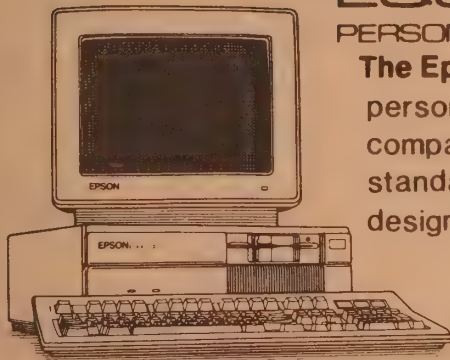
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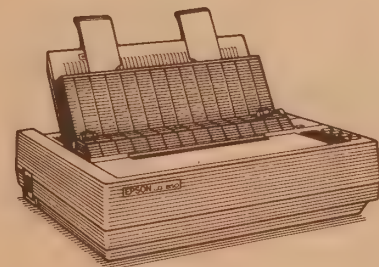


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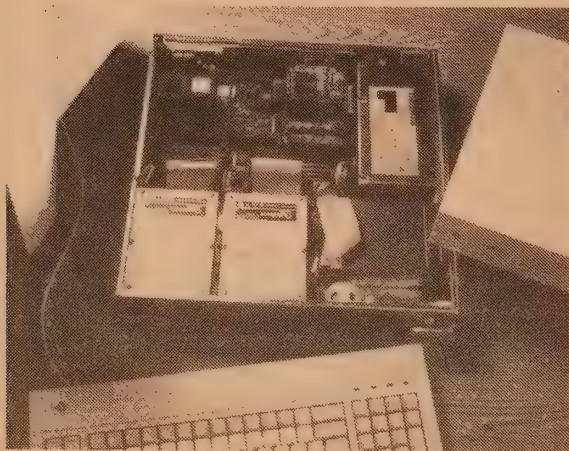
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NEWS AND ANALYSIS

Sun Introduces New Workstations And Graphics Processors

Acknowledging the growing market for powerful general-purpose and graphics workstations, Sun expanded its line of high-end personal computers with two new machines as well as a family of graphics accelerators. The announcements were both a strengthening of Sun's SPARC RISC-based line and its latest foray into the UNIX-based graphics workstation market that has heated up in the last year with new interest from both the engineering communities and the Defense Department. Sun's announcements are a direct assault on both its traditional rivals at the newly-combined Hewlett-Packard/Apollo, as well as graphics workstation specialty companies like Silicon Graphics and Evans and Sutherland.

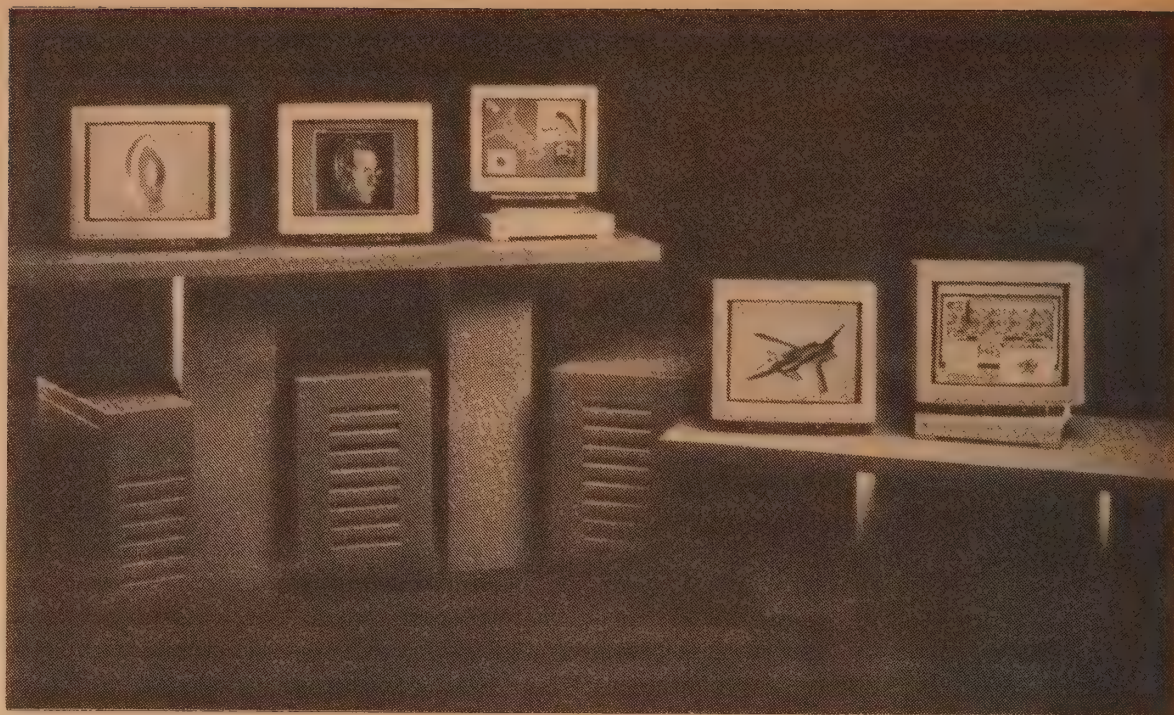
In the RISC arena, Sun announced the SPARCstation 1, a small desktop computer, with three expansion slots and 8 Mb of RAM, that costs less than \$9000. Sun says that the system runs at 12.5 MIPS, making it significantly faster than even high-end PCs.



The SPARCstation 1, Sun's entry-level RISC machine, offers power in a compact design.

The other RISC announcement was of high-end floor-standing systems with VME bus slots called the 300 series. These new systems renew Sun's commitment to its open RISC architecture, which Sun touted highly at the press announcement by showing off 500 programs that ran on SPARC. However, to prove that they have not abandoned the 68000 family of CPUs, Sun also introduced two new members of the Sun 3 family that use the fast 68030. This led some people to assume that factions at Sun were still warring, but others noted that the SPARC-based systems and the 68030-based systems had similar features and applications, so that Sun was most likely trying to keep its current customers happy and to attract new ones into either line.

The most exciting news of the announcement was probably the graphics cards for the new systems. The graphics accelerators, called the GX and GXP families of processors, are optimized to run graphics using the GKS and PHIGS standard software libraries. Both families can display two-dimensional and



Sun announced both SPARC and 68030-based workstations.

three-dimensional graphics at speeds exceeding most other graphics workstations available, and the GXP accelerator is optimized for rendering three-dimensional solids. Sun also introduced a board for displaying full color video in a window on the graphics screen. With these graphics announcements, Sun can offer the high-speed graphics that its competitors have used as an edge in the workstation market. However, until the popular graphics-based software that runs on other systems is ported to the new Sun machines, other manufacturers will still have more clout in the eyes of system purchasers.

At the announcement, Sun specifically compared the new hardware to the Personal Iris from Silicon Graphics. The next day, Silicon Graphics' stock dropped as Wall Street reacted to the Sun comparison. However, Sun later admitted that the numbers it used in the comparison were wrong and that there was a great deal of confusion over what numbers should be matched up with what tests. Silicon Graphics claims that Sun's announcement was full of overstatements, but Sun says that the incorrect numbers were simple mistakes and that the new Sun graphics systems were indeed faster than the Personal Iris.

Lotus Splits 1-2-3

There will no longer be a group called "1-2-3" users: there will be two (and possibly more).

Lotus, trying to save face over the horrendous delays in releasing 1-2-3 version 3, but trying not to alienate low-end users, announced that there will be two types of 1-2-3: version 2 for low-end users and version 3 for high-end users. The split strategy, which Lotus denied existed even in January of this year, was forced on Lotus because they could not get the forthcoming version 3 to run on 8086- and 8088 based systems; they could not even get it to run on 80286-based systems that had less than 1 Mb of RAM.

Instead of turning their backs on users of these systems, Lotus will continue to support the lower-end systems with version 2.2. According to Lotus, version 2.2 will have many new features over 2.01, but will not be available until this fall. Of course, since Lotus has gained a reputation for being incredibly wrong with its predictions about when software will be released, it is likely that current 2.01 users who do not upgrade to version 3 will not see version 2.2 until next year.

Lotus tried to make its announcement sound like

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NEWS AND ANALYSIS

it had planned this all along, but many corporate users who had been briefed by Lotus last fall were surprised that it would take so long for Lotus to come out with version 2.2. This leaves the majority of 2.01 users without any of the new features that will go into version 3.

At the announcement of version 3, Lotus made a big deal of the fact that the majority of computers that are sold today will run version 3 (although just barely). This was questioned by many analysts, who point out that the vast majority of portables sold today do not use 80286 or 80386 chips, and even those that do often do not have 1 Mb, and it is often difficult to upgrade their RAM. Given that low-cost portables have become very popular and a commodity item for many stores, it may not be accurate to say that most computers today can run 1-2-3 version 3.

Version 3 will support up to 16 Mb of either extended or 32 Mb of expanded RAM memory, but requires at least 1 Mb. This is a vast improvement over version 2.01, which can only access 640 K of memory. In order to use this greater amount of memory, Lotus is using technology developed by Rational Systems, as well as the LIM expanded memory specification that is common in many DOS programs.

The OS/2 version, which will probably be released at the same time as the MS-DOS version, will require 3 Mb of RAM. The program will support linked spreadsheets and multiple spreadsheets on the screen at the same time. This feature (already common in most other spreadsheet programs) allows much greater flexibility in dispersing data and for reading data from other sources such as networked databases. Lotus has also sped up 1-2-3's recalculation and allows background recalculation. Version 3 will allow the user to see graphics without leaving the program and includes more graph types. There is a new file format for including these new features, .WK3.

Version 2.2 will have a subset of these new features. It will include the file linking, although not seeing multiple worksheets on the screen. It will also include some of the recalculation features and will permanently include the *Allways* program for

improving 1-2-3's printed output. Lotus also announced that it had bought all rights to *Allways* from Funk Software. Version 2.2 will not be able to read or write .WK3 files, but version 3 will be able to write .WK1 files so that the two can interchange files. It is likely that most 1-2-3 users who can't update to version 3 will update to version 2 whenever it is available. Lotus expects that you will be able to run version 2.2 with 384 K of RAM, but 512 K is recommended.

The update costs for either of the two versions will be \$150. Users can buy upgrades from dealers or directly from Lotus. For anyone who bought 1-2-3 after September 6, 1988, an upgrade is free directly from Lotus. The packages will each cost \$495 (although version 3 will go up to \$595 at the end of the year) and will come on both 5.25" and 3.5" disks. Registered owners will receive detailed update information when version 3 is ready. The upgrade offer requires that users send back their system or backup diskette.

Of course, Lotus cannot let the 1-2-3 program stagnate in its current state, but it will face big problems by splitting the program into two separate lines. Since its inception, 1-2-3 has been supported by a huge amount of third-party software, books, and training courses. This has been one of Lotus' biggest selling points: everyone knows the software, and you don't need to rely on Lotus for after-purchase support.

This support will be fractured when 1-2-3 turns into two lines of software. For instance, if you buy a book on 1-2-3, will that book be the correct one for your version of 1-2-3? What if you want to move from version 2.2 to version 3? Lotus may be assuming that this will be handled much like it has been for upgrades in other program, where all the third-party manufacturers simply update their products, but it will be much more difficult for them to either cover both lines in a single product or to make similar products for each line. For example, the "add-in" programs that work with version 2.01 will not work at all with version 3. This means that many companies that spent months adapting to Lotus' technology that let them work with 1-2-3 will not be able to adapt their programs to version 3.

It is not clear how this will affect conversion to version 3, but it is likely that many people who rely as much on the add-ins as they do on 1-2-3 will upgrade to version 2.2, even though they are on machines that are capable of running version 3. Since version 2.2 will follow so much after version 3, it will probably take at least a year until third-party manufacturers can figure out the importance of each of the versions and therefore how to commit

continued

Lawyers In The News

•Xerox is beginning to flex its muscles in the look-and-feel arena, and not everyone is reacting favorably. Earlier this year, Xerox sent a letter to Metaphor claiming that some of Metaphor's software violated Xerox's copyrights and that Metaphor should pay Xerox for the use of those copyrights. Metaphor, whose graphical user interface has attracted a great deal of attention as an alternative to the Macintosh and Microsoft *Windows* technology, responded by suing Xerox. Metaphor has asked the US District Court to declare that Metaphor's technology does not infringe on Xerox's copyrights. The case is just one of the half dozen that may define what parts of a computer display are or are not protected by the current copyright code.

•Jasmine has accused its disk drive supplier, Rodime, of conspiring with employees to ruin Jasmine and thus make it less expensive to take over. Jasmine's lawsuit was immediately rebuffed as being preposterous and a desperate attempt by Jasmine president Dennis Chang to divert attention from his failing leadership of the company. Jasmine is asking for \$25 million from the defendants, who include two of Jasmine's co-founders. Jasmine became the leading supplier of third-party Macintosh hard disks, but has been plagued with poor customer support and faulty disks in the last nine months. Many of the individual defendants in the case have previously sued Jasmine and Chang for wrongful termination, defamation, and denial of stock rights.

•The Apple vs. Microsoft case will probably drag on for at least another 18 months unless a settlement is reached before then. The judge in the case has set next January as the cutoff date for depositions in the first part of the case, and strongly suggested that the parties in the case try to settle their differences out of court. Lawyers for all sides, however, indicated such settlement was unlikely. Apple is still crowing about its first round victory, although lawyers for Microsoft and Hewlett-Packard have been trying to get as much publicity as they can for every instance where the judge has sided with them.

•Ashton-Tate and Lotus filed copyright infringement suits against three large Italian companies, accusing them of widespread pirating of software. According to their research, over 80% of the software used at the three companies was pirated.

•Apple has yet to stomp on the long-rumored Taiwanese Macintosh clones, but it may have to soon. A computer store in Akihabara (the electronics heaven of Tokyo), Robin Electronics, is currently taking orders on the clone that is significantly less expensive than the normal price for the Macintosh. The clone comes in a PC-clone box with 2 Mb of RAM but no ROM. In case you were wondering how they suggest you get ROMs for the system, you need look no further than the display case on which the Mac clone sits: the store will also sell you a ROM-copying system.

Hacker Community Mourns Jim Hauser

Jim Hauser, a physics professor at Cal Poly in San Obispo and author of innovative software, died of an apparent brain aneurism on March 13. Hauser first came to public notice with his first product, *Type Attack*, a typing tutor with a *Space Invaders*-like interface, which, in the words of Hauser's former student William R. Buckley, "tricked players into thinking they really enjoyed the game while they subconsciously learned to touch type."

Hauser also pursued explorations of artificial life and was the author, along with Buckley, of the Apple Worm program, published in the March 1985 *Scientific American*.

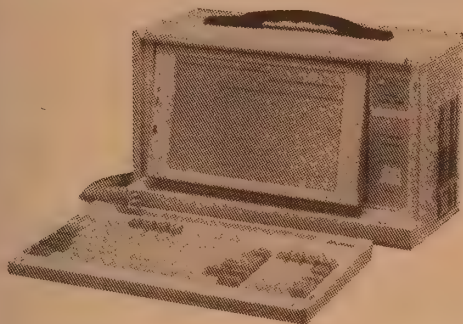
At the time of his death, Hauser had nearly completed his latest project, the HyperSpace Simulator, a graphic-based calculator for solving problems in general and special relativity. According to Buckley, the product needs very little additional work, mostly in the form of documentation, and should be commercially available later this year.

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resources. This will certainly cause new buyers to look at competing programs.

Businessland To Sell NeXT Computers

Last October, Steve Jobs insisted that the higher education market was more than sufficient to support the NeXT computer for many years. Now, in a surprising about-face, he has signed with Businessland to sell the NeXT computer into the corporate market as soon as it is available in the college market.

The reversal comes mostly because Jobs vastly overestimated the amount of third-party support for the NeXT system as long as it was a college-only computer. Dozens of companies on whom NeXT relied decided to hold off on development for the machine until sales to businesses were imminent, saying that it was unlikely that sales to only college students would be worth the effort.

The announcement could be a big score for Businessland, which recently lost its account with Compaq and had not yet settled on a line of UNIX-

based computers. However, since the NeXT computer will be quite expensive relative to other UNIX computers, the agreement could lock Businessland into an attractive but hard-to-sell computer.

As the sole outside supplier of NeXT systems (at least initially), Businessland will attract all initial interest outside of the college market to its stores. Of course, this will initially consist mostly of tire-kickers and parents of students who are asking them to pony up the \$6000 for the student version (Businessland will sell the same system, minus laser printer, for \$10,000).

However, since the user interface and hardware built into the NeXT machine are more advanced than the standard configurations of other computers, many people who are just playing will get a real chance to see what the computer does and how the third-party software (which, it is hoped, will begin to be produced soon) works. This gives NeXT a great method of introducing the product to the world without spending tens of millions of dollars on advertising. However, it is doing so in stores that also sell IBM PS/2s and Apple Macintoshes. With the NeXT's high price, this could lead people who are interested in the NeXT's features to also look at the PS/2 and Macintosh and, seeing the lower price, choose them over the NeXT. The demonstrations on the NeXT systems in the Businessland stores will have to be spectacular and also show the usefulness of the computer at the same time in order not to cause potential buyers to simply wander over the other displays.

NeXT and Businessland will be heavily reliant on each other in the exclusive deal. With only a single chain of dealers (other than the colleges that will sell the computers to students, professors, and depart-

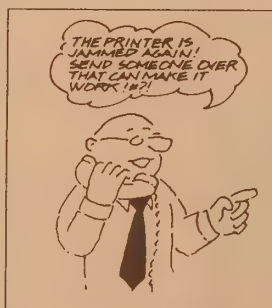
Many software developers balked at writing for the NeXT system when it became clear that the market would be restricted to only college students and faculty. NeXT's deal with Businessland should allay those fears, but not to a great extent since it will be unclear how many systems will actually be sold into the business market and for what uses.

ments), NeXT must hope that sales through the Businessland stores keeps Businessland's interest high for many years as the user base grows.

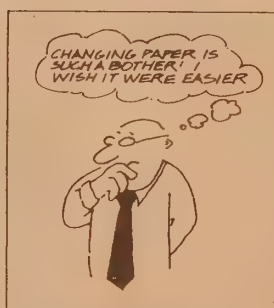
At the same time, NeXT must be sure that its sales

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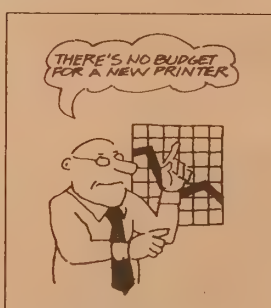
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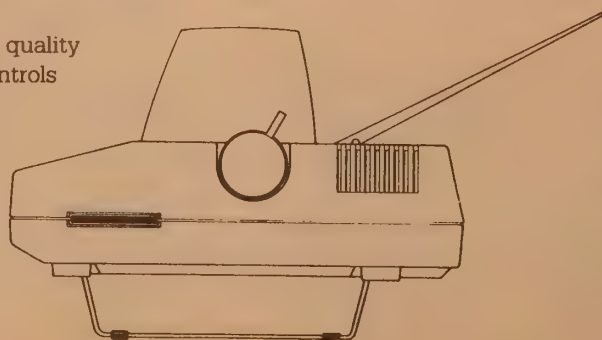


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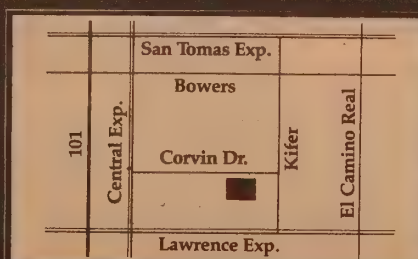
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NEWS AND ANALYSIS

at colleges do not create a black market for lower-cost NeXT systems that sap the sales through Businessland. This black market was a big problem when the Macintosh first came out in 1984, but it was not as noticeable since there were many dealers at the time and they could all assume that the lack of sales was due to the inter dealer competition. With the NeXT computer, it will be much more obvious to Businessland if the student black market draws off of the single dealership.

Likewise, Businessland is very reliant on NeXT, since Businessland has said that the NeXT system will be its only UNIX-based workstation offering. If UNIX takes off in the next few years but the NeXT system doesn't, Businessland will be left behind. Even if one of NeXT's competitors such as Sun or the new Hewlett-Packard/Apollo starts making big strides, Businessland's exclusive relationship with NeXT will cast a shadow over its ability to keep up with the new market.

Many software developers balked at writing for the NeXT system when it became clear that the market would be restricted to only college students and faculty. NeXT's deal with Businessland should

allay those fears, but not to a great extent since it will be unclear how many systems will actually be sold into the business market and for what uses. For example, in 1984 no one could have predicted how much the Macintosh would be used in business for document layout and design or for business presentation preparation.

Although the NeXT computer's software development makes creating software to work on the NeXT much easier for some applications, it is very difficult to convert current MS-DOS or Macintosh software to the NeXT system. Thus, much of the software that comes out for the system will either hook into the software that is bundled with the computer or will be simple extensions of the developer's interface toolbox. As the NeXT market matures and software companies can figure out what students and businesses want for the system, more software will probably appear that is NeXT-specific. However, since the number of NeXT systems will be small relative to the PC and Macintosh for the first few years (at least, and probably permanently), software companies will have to decide if it isn't more worthwhile to create software for other systems before the NeXT computer.

The NeXT system may have some business advantages that were not emphasized when the computer was introduced because they were not considered important for the college market. For example, the very large internal disk will make it much easier for single workstations to hold large financial databases. This is not as important in a networked environment where one computer with a large disk can act as a data server. However, given the high cost of the NeXT computer, it is likely that it will be used by itself or as the only NeXT system on a network.

Thus, having a large local disk storage will make it more useful for business applications that require a great deal of data, such as stock market analysis.

Businessland predicts that it can sell \$150 million in NeXT systems and software in the first year, which many analysts think is incredibly optimistic, given that it is a new computer and it does not have that many features that differentiate it from other better-known systems. Most likely, \$50 million is a much better estimate, and even that may be high if it takes software manufacturers a long time to get useful software to the market. That number might also be cut if Sun or H-P/Apollo make a strong push into the business market through one of Businessland's many competitors, or if the black market from college students selling to others heats up.

It could also be cut if Apple or a value-added reseller creates a Mac II package that comes with many of the NeXT's features built-in. NeXT and Businessland are banking on the early hype about the computer and Businessland's large number of stores and established clients. By the time the computer is available in great numbers in the stores, the hype will probably have died down and been replaced by real-world tales of its use on college campuses. If those stories are positive and it seems like there will be a great deal of business software, Businessland will be in very good position as the sole retailer for the system. However, if it becomes clear that the computer has been oversold or is really only good for people who want to create and modify programs themselves (as is true in the college market but is certainly not true in the business market), the NeXT/Businessland deal could hurt both companies. ■

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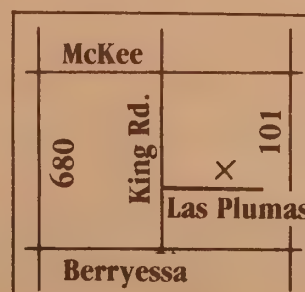
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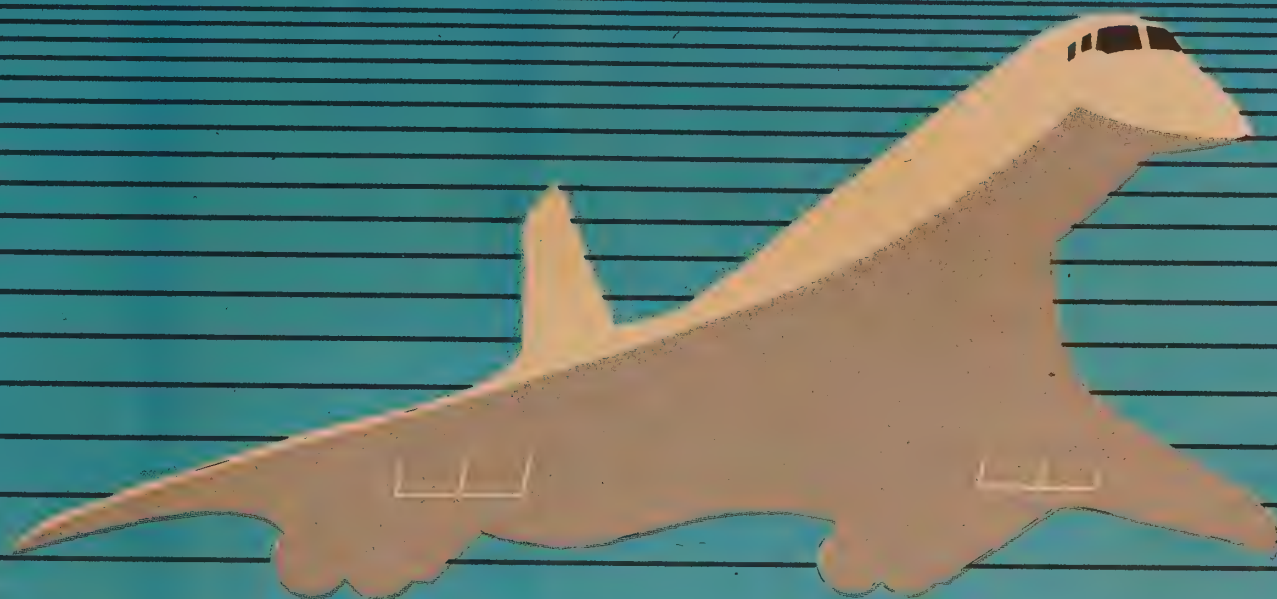
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A Headhunter Asks: Are Sacred Cows Keeping Your Firm From Hiring Or Retaining Quality Professionals?

A medium-sized software manufacturer in Fremont was experiencing tremendous turnover problems in its product development department. Topnotch programmers, drawn by the firm's reputation as an industry innovator, would eagerly join the company's staff; yet, within six months, they'd be gone.

Since the company prided itself on treating its employees like family, senior executives were surprised that they couldn't keep competent programmers. It turned out that the deputy director of development, who had been with the company since its inception, was a technological wizard but an abysmal manager with a severe lack of people skills. Out of a sense of loyalty, the company resisted firing him; as one departing programmer said, "It'll take an act of Congress to get rid of this guy."

In another case, a small personal computer manufacturer needed a regional sales manager for its Los

Remember that if a candidate looks good to you, he or she is probably being courted by other companies as well, and—if you wait too long—may accept an offer elsewhere.

Angeles office, but could only afford to pay \$50,000. The position had been vacant for over eight months, at great loss of potential revenue, yet no one would challenge the company's policies and loosen the purse strings so they could get the most qualified person for the job. Fortunately, a \$4,000 hiring bonus was arranged to circumvent the position's salary cap, and the company agreed to pay for the costs of relocating the most promising candidate from San Diego. But the firm came perilously close to losing the applicant.

What these two stories have in common is that they both illustrate how sacred cows—those seemingly inviolate corporate policies or sacrosanct personnel—can keep firms in the computer field from attracting or retaining top-notch professionals. In today's tight labor market, however, CEOs can't risk nurturing sacred cows in their corporate culture.

Of course, most senior managers in the computer field, whether they work for a small entrepreneurial concern or a manufacturing behemoth, don't believe there are any "carved-in-granite" rules or "untouchable" employees in their organization. However, my experience tells me otherwise, and this collective myopia is costly in terms of lowered productivity

and morale, not to mention the expense of recruiting.

These sacred cows may be defended as corporate policy, but often they are merely a convenient way for department heads to avoid assuming responsibility for inefficient or counterproductive procedures. During the hiring process, these "written-in-stone" rules take the form of insisting that a job prospect have "the IBM look," inflexible compensation and benefits packages, and adhering to an unnecessarily long selection procedure. Within the corporate culture, the most glaring sacred cows are technically proficient supervisors who aren't capable of managing people, technology that "ain't broke," and outmoded ways of doing business because "we've always done it that way."

I've noticed on numerous occasions that employers feel safer hiring applicants who have the "right" corporate look. Don't make appearance more important than substance. You may inadvertently dismiss an otherwise outstanding applicant simply because he—or she—doesn't conform to your idea of how a corporate manager should look. A more reasonable approach would be to outline the duties to be performed, and then find someone who can handle them.

Another corporate sacred cow is The Hiring Committee. Promising candidates end up being screened by an endless round of committee members because no one is willing to take responsibility for making the final choice. Talented professionals, meanwhile, may become so disenchanted by the delays that they wouldn't consider joining your staff. Remember, too, that if a candidate looks good to you, he or she is probably being courted by other companies as well, and—if you wait too long—may accept an offer elsewhere.

That's why it's in your interest to streamline the hiring procedure as much as possible. A more effective method is to eliminate the number of bureaucratic levels that must be waded through before a selection is made, and to give your managers more decision-making power. After all, these candidates will be working directly under *them*, not you.

It's also worth noting that the industry has undergone vast changes in the past decade as computers have become accepted in the workplace. But many companies still cling to outmoded ways of doing business that are holdovers from the days when they were struggling start-ups run by mavericks.

For example, are your salespeople responsible for installation? This policy probably made a lot of sense years ago when members of your staff did double duty trying to get the company off the ground. But today, why not have support people doing this task so your salespeople can get back in front of prospects instead of wielding a screwdriver?

A corollary to this is the "if it ain't broke, don't fix it" mentality that pervades the industry. Many companies insist on using systems that may be

outdated simply because they still do the job relatively well. But in the computer field, if you're not constantly evolving, you're falling behind. No one feels this pressure more keenly than your technical people. They know that if they don't keep their skills current, eventually they'll be unemployable. If your company doesn't keep pace with technological changes, they'll switch to one that does.

Another sacred cow in the computer industry—especially for firms involved in product development—is the techy in a managerial position. Again, this practice is a holdover from the company's startup days when the key employees were primarily technical wizards. A successful manager, however, must have the ability to motivate, influence, and communicate with people, and to create a working environment in which employees are inspired to do their best work.

Don't make appearance more important than substance. You may inadvertently dismiss an otherwise outstanding applicant simply because he—or she—doesn't conform to your idea of how a corporate manager should look. A more reasonable approach would be to outline the duties to be performed, and then find someone who can handle them.

Unfortunately, these qualities are often lacking in technically-oriented supervisors, and their departments frequently have high turnover rates. Computer companies need to recognize that the field has changed, and that management people must be good communicators who can work effectively with people—technical skills must be enhanced through development of management technique.

Remember, a company is only as good as the people who work for it. The difference between success and failure in today's competitive business climate may hinge upon the quality of your staff. That's why it's important to root out the sacred cows in your corporate culture that may be preventing you from recruiting or retaining topnotch professionals. ■

Robert Cowan is President of Search West, a contingency search firm based in Los Angeles. The firm has several recruiters among its 150-member staff who specialize in searches for the computer industry. Mr. Cowan can be reached at (213)203-9797.

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Graphical Data Manipulation: The Antidote To Code

I recently had occasion to have to unscramble the spaghetti-pile data structures and manipulations I had created long ago as one of my first—self-taught—C programs. Of course, when I wrote it, I knew it was just a one-shot temporary program. I knew I would never need to modify it. I knew I could remember how I designed the structures and algorithms. Yeah, uh huh!

So, I didn't keep any of the data structure or algorithm design documentation. For a many-page C program. Even though I knew C permits—nay, encourages!—convoluted code contortions exceeded in their opacity only, perhaps, by original LISP. Some folks never learn!

Anyway, as I furiously fumbled through pages of compactly constructed pointer manipulations, a foggy vision entered my constipated mind.

A Graphical Data Manipulation System

We need a programming “language” that presents data structures in graphical form—just like we sketch them, before implementing them in some antique, text-based programming language. Let me hasten to say—this proposal is not clear nor complete; it's merely thoughts worth pursuit as we convert today to tomorrow.

Display a data bit—a single binary cell—as a small square. Display a byte as eight bit-squares; perhaps with interior vertical lines quarter-high. These are the computer's primitives found in most folks' initial data design sketches.

Mouse Time

Use point-and-click to attach these primitives together—horizontally and vertically, aligned or indented—to display desired data structures for a program. Defining the data-type of each element—integer, real, char, logical, pointer, etc.—will force the primitives to display in certain ways as limited by a given machine and programming language.

For example, perhaps integers are presumed to be two bytes long with a sign-bit. Then, when a datum is identified by the designer as an integer, it's displayed as 16 adjacent bit-cells, with a +/- in the most significant bit. If specified as unsigned, the +/- goes away. If specified as a “long integer,” the display changes to the system's standard for such data—probably a four-byte, 32-bitcell display.

Long strings of bits or bytes might be represented

with ellipses (“...”) in their middle. Bit and byte position numbers can be in a lower or upper corner. (This system's designer can decide whether to begin numbering with 0 or with 1.)

Display Data's Stuff

Bit and byte requirements of a datum can be seen at a glance—including numbering and sign-bits, if any. Now, add the the name of the item. This could appear in a cut-out part of the item's upper border. If there is an initialization value, it can appear inside the rectangle (that's the reason not to put the variable's name inside the box).

Complex data structures—composed of multiple, mixed primitive data types—could have enclosing rectangles with their own name.

Limits—if any—could be displayed in a cut-out part of the lower border.

Now, I ask ya, wouldn't this better illustrate a data structure than mounds of text, brackets, braces, colons, commas, and equal-signs? But wait, there's more!

A Dandy Debugger

Once the data structures for a program are completely “drawn” and displayed in this manner, think how an execution-trace might work for program debugging:

During slow-speed trace- or debug-mode execution, each variable's contents show in their rectangles. By using point-and-click, data-boxes can be flagged and unflagged to cause program-pause when their contents change.

When data structures exceed the screen's display size, zoom and window tools found in computer-aided drafting systems can be used, along with split-screens for watching widely separated variables.

Color could be used in a variety of ways—aside from making elementcontents stand out from the element's box, name, limits, and cell numbers.

For instance, during execution, the most recently changed values could appear in red, then fade to pink, light blue, and blue as execution continues and more variables change. Then, even in zoomed-out displays where individual element contents are unreadable, the observer of an execution trace could see which elements are changing, when.

The Real Point

But, what started this notion was my frustration with trying to untangle some mostly-forgotten complex pointer structures that I had developed in an old C program. Consider how pointers—potent but dangerous programmers' tools—might be treated in this display system.

When a variable is declared to be a pointer, it could have an arrow—with point and shaft—originating from its rectangle. The program designer could then point-and-click to identify what cells and data structures the pointer could address. This would be a means for specifying oft-needed limits or bounds on where a pointer could point. (As Sagan might say, computers programmed with

Now, I ask ya, wouldn't this better illustrate a data structure than mounds of text, brackets, braces, colons, commas, and equal-signs? But wait, there's more!

pointers can make billions and billions of mistakes per second.)

Think of pointer display during execution: Each pointer—shaft and arrow, in a unique color, could move around the structures, clearly illustrating what the pointers are doing (as opposed to what the programmer thought they would do!).

Your Preprocess, Your System

At a minimum, such a data display system could provide a one-to-one mapping between easy-to-comprehend visual displays and data specification code in most popular programming languages. If so, then—even without the execution trace utopia—it could serve as a far preferable preprocessor or front end for a compiler, allowing much more intelligible specification of a program's data structures.

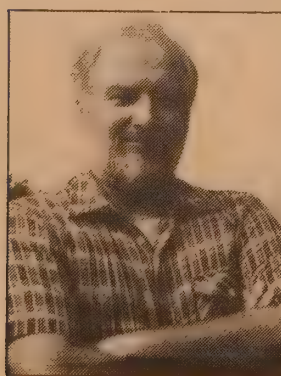
Which is to say, this system can be developed incrementally—first as a graphical macro preprocessor for specifying data structures, then enhanced to become a full programming system.

(I'll only mention the very significant fact that similar graphical forms can display program code, just as data structures are displayed. Remember—a program is just “data” that is executed [instructions]. Note that program flow control involves pointers to branch-point targets; decent programming languages have program blocks and block nesting, etc.)

These are a few thoughts for tomorrow. Now, go do it—for fun and profit. But better hurry—I wanna do this, myself.

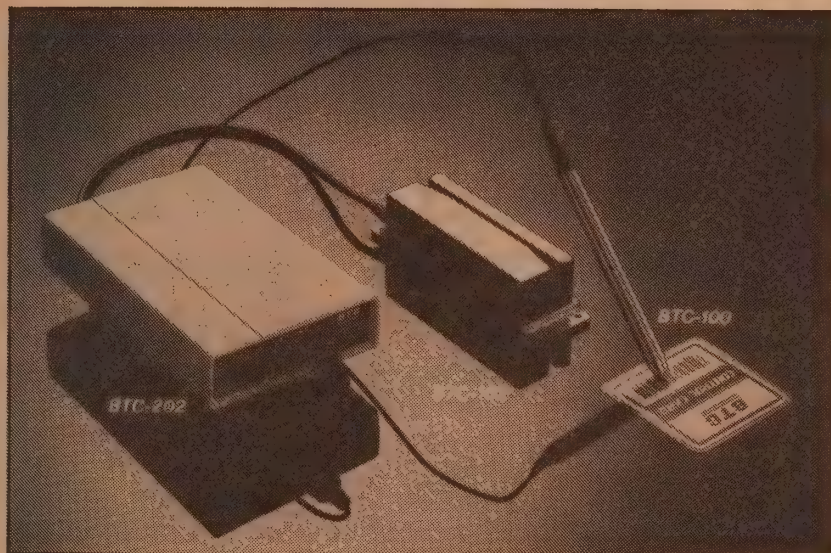
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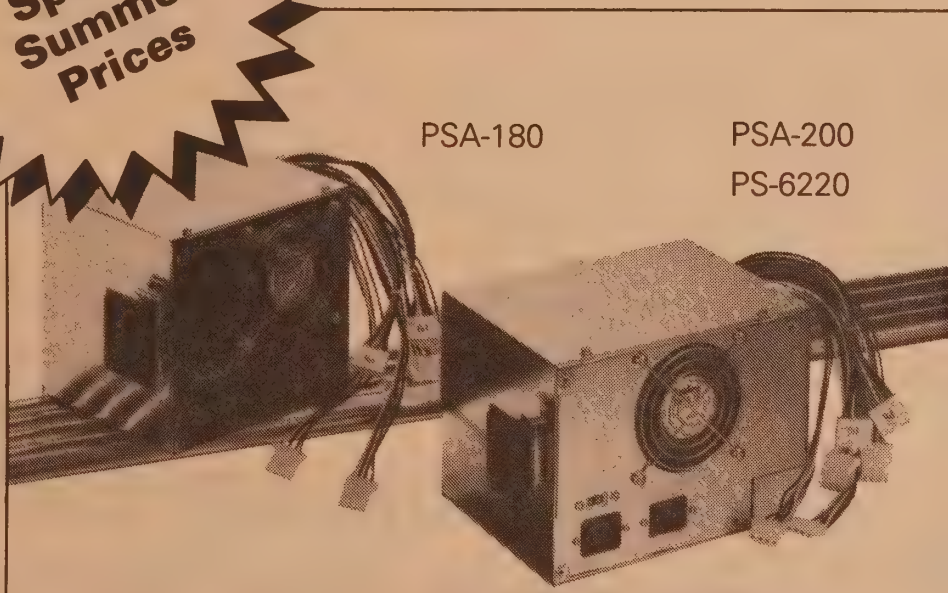


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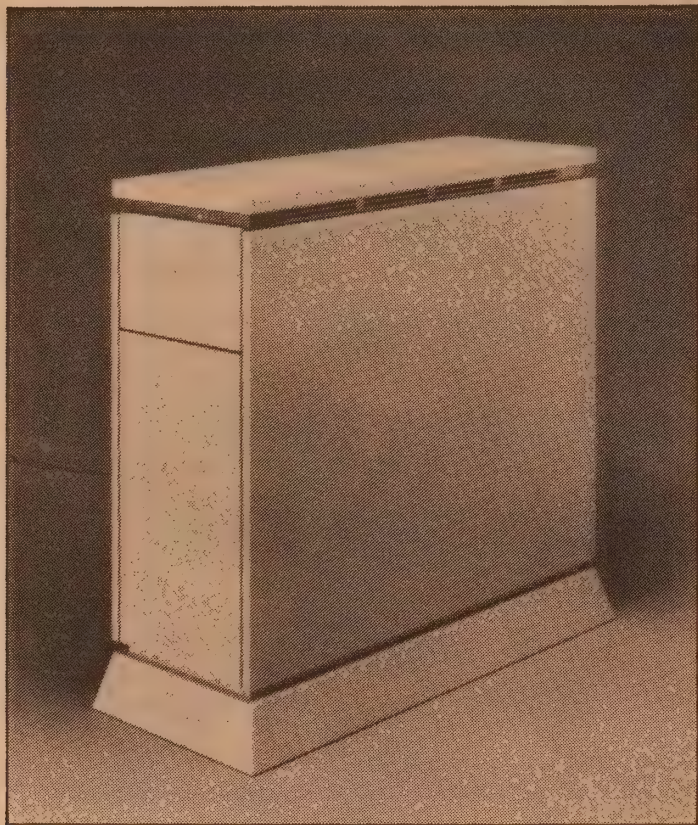
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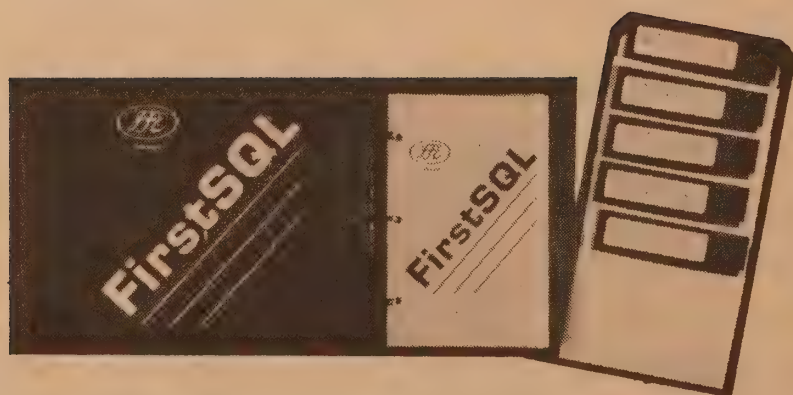
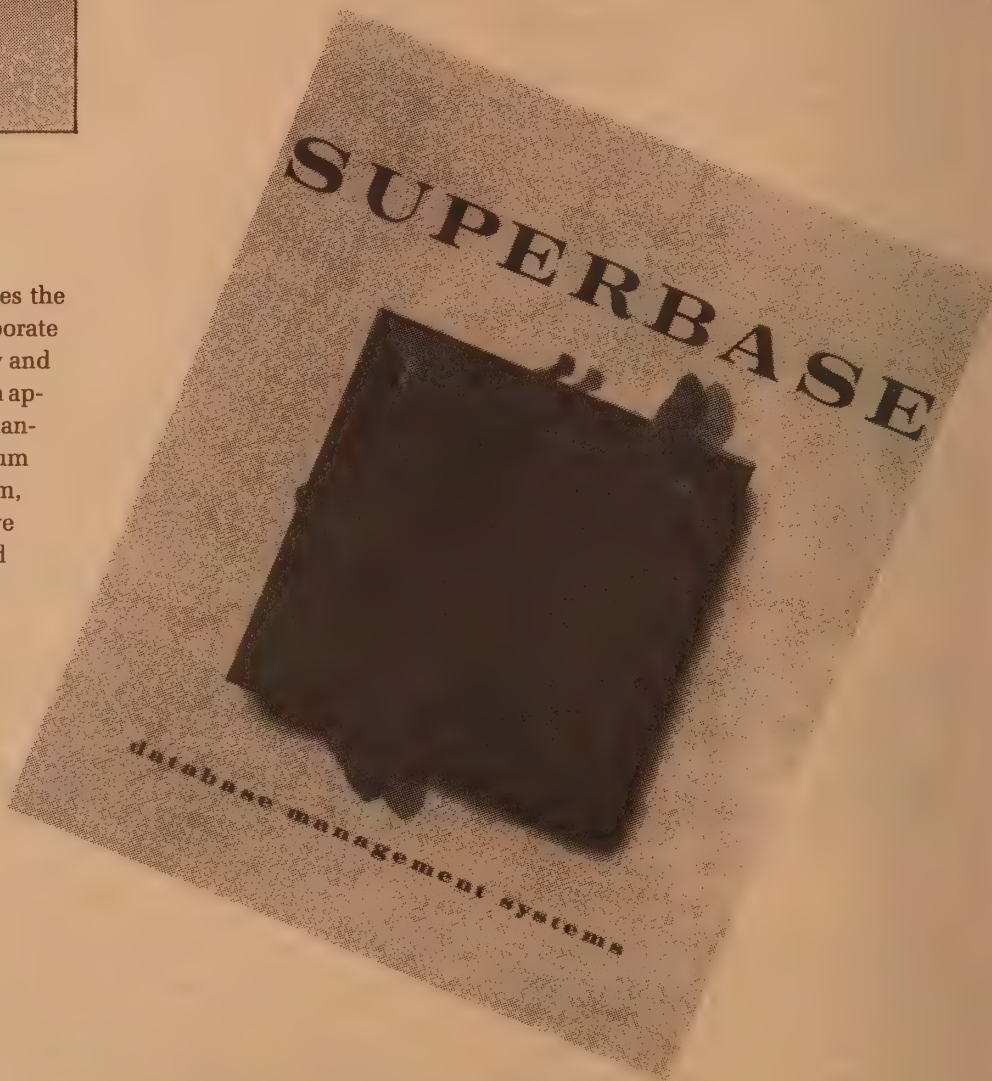


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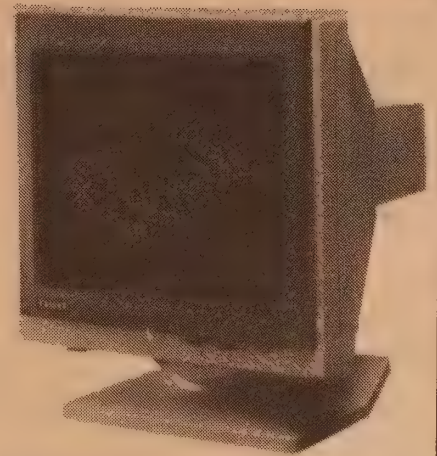
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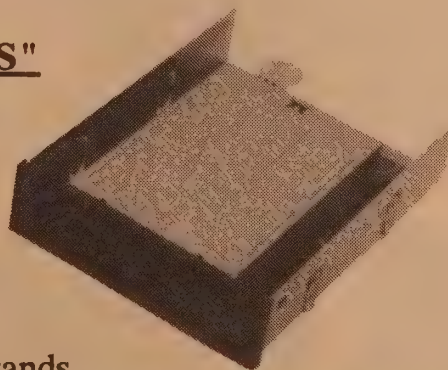
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How To Succeed By Trying Hard

An Interview With Bob Wallace, Author Of PC-Write And Founder Of Quicksoft

Back in the days when the IBM PC was a nearly application-less infant, a man named Andrew Fluegelman wrote a telecommunications program he called *PC-Talk*, mostly because he needed one and there weren't any. It soon became apparent that other people thought it was pretty useful too, but Fluegelman was already a busy book publisher and wasn't that interested in starting a software company.

One day the idea came to him. He called it Freeware™. Retaining the copyright and ownership of *PC-Talk*, he nonetheless encouraged people to copy it and pass it around, with the stipulation that if they actually liked and used the program they should send him a certain amount of money. Interviewed shortly before his death in 1985, Fluegelman said that at trade shows across the country he was frequently accosted by check-book-wielding strangers who'd downloaded his program and were ready to become registered users.

The principle embodied by Freeware (a term properly used only in connection with *PC-Talk 3* and earlier versions) found great popularity among programmers and users, and was called shareware. The PC's popularity created a burgeoning cottage industry of programmers who wrote useful applications, allowed their free distribution, and asked for a donation for product support and/or documentation.

One of the first shareware applications was *PC-Write*, written by Bob Wallace, a Microsoft veteran living in Seattle. From the registration fees of satisfied users grew Quicksoft, which currently enjoys approximately \$2.5-3 million per year in *PC-Write* sales. The product is constantly refined and updated, and Quicksoft now publishes *PC-Write And Friends*, a catalog of utilities and other applications that work well with *PC-Write*.

As the industry becomes more sophisticated and garage computerists go corporate, an increasing number of vendors, including the late Fluegelman's Headlands, are abandoning the shareware distribution method in favor of more conventional commercial channels—with mixed results. Quicksoft remains a staunch supporter of shareware, though in keeping with its whatever-the-customer-wants approach to doing business, it gives people the option of buying *PC-Write* off the dealer's shelf, as well as getting it from a user group disk or downloading it off a BBS.

Bob Wallace and a large percentage of his staff were in San Francisco for the Computer Faire, so we took the opportunity to talk with him about *PC-Write* in particular and the shareware community in general.

d At Shareware er

By Mary Eisenhart and Lenny Bailes • Photo: Michael Jay



So Bob, how did you get into all this?

I remember clearly, I was 12 years old in 1961, I read a *Reader's Digest* article "Men who talk to machines." And I said, "Oh, I'm going to be a programmer!" (laughs) And I did computer date dances; I went to Brown University and ran into a guy named Ted Nelson, and got interested in hypertext, and then I got tired of the East Coast and went to Santa Cruz. And I finally went to the University of Washington, and got a bachelor's degree.

But computers were expensive. They were big million-dollar things, and I got very discouraged and moved to an island and basically pouted because computers were expensive. And then the 8008 came out, and Don Lancaster's TV Typewriter. So I said, "Well! Computers will be cheap! I'll go back into the business..." So I went back. I started the Northwest Computer Society in '76, got a masters in computer stuff from the University of Washington, and then went to work for Microsoft in '78. I worked on their Pascal compiler until '83, and then decided, "Gee, if I'm working this hard, why don't I start my own company?" (laughs)

Absolutely. Why should Bill Gates get it all?

Yeah, yeah. (laughs) Really!

He has plenty.

He really has plenty, yes. Of course when he is a month late on his word processor, he goes down by \$180 million. I only go down, what, \$140 thousand! (laughs)

So in early '83 I started Quicksoft, and middle/late '83 at the IBM PC Faire, I came out with version 1.0.

Then in early '84, *PC Magazine* ran a review, and we had enough money that I could hire our first employee, Megan Dana. Now Megan Dana Wallace. That worked out very well. (laughs) She was our first employee, and we were married in '86. And we now have 31, going on 32 people, and probably do about \$2 1/2-3 million in sales this year.

Are you publicly traded, or are you still private?

We're still private. I own it all. (laughs) But we kinda pretend we're public in a way—we pass out profit and loss sheets to the employees, because they get profit sharing, and I feel the more they know about what makes us profitable, the better we'll do, and the better they'll do.

So what makes you profitable?

Oh, just doing—you know, helping people create documents. That's our mission. I feel writing is what advances civilization, and if we can help people write, we will help civi-

lization advance. A small goal (laughs) but we can do our part. We're not forcing it in some direction, we're just helping it go whichever way it wants to go. I like that kind of value-free helping things advance.

But the more that we help people, the more we give people good features and good technical support and good software, the better we do.

How did you decide to go the shareware route rather than straight commercial distribution?

At the time there were another couple of shareware products, *PC-File* was doing real well, and *PC-Talk* was doing well. There wasn't really a word processor. And at the time I was really kind of 95% programmer, 5% entrepreneur and marketing and things like that. I felt I could do a wonderful word processor, but I couldn't explain why. I just felt people would use it and they would

like it. It would just feel right. But I felt I couldn't just run an ad and say "PC-Write is the one that feels right."

So I decided that shareware was the way to let people try it and see if they liked it. It was certainly very consumer-oriented—it certainly helps people make the buying decision—which is very difficult, to pick a software product, especially a word processor. Word processing is such a creative tool, and you get so involved with it and use it so many hours a day, it has to feel right, not just have the right features. So I felt people should be able to use it and really decide that they like it first, and then buy it.

What percentage of the copies out there are registered, do you think?

Well, it's an interesting question, but not *that* interesting. Actually, the bottom line is—the bottom line. Do we have enough money coming in to pay all the employees, and print

manuals, and things like that. And whether we make a certain amount of money because 10% of the people are registering, or 20%, really doesn't make a difference. The people who don't register are simply potential buyers.

So I don't worry about the people who don't register. I worry mostly about the people who *do* register. I try to make sure they're happy, that they've got good software and good tech support and we're there. The more I can do for the people who do register, the more people will register.

But my best guess as to how many people register is 20-25%. Or at least, who pay for it. We do a fair amount now with group licenses and campus licenses, so we have, we think, about 500,000 users, paid and unpaid. We know we have about 120,000 who've paid in one form or another, 80,000 on group license, 40,000 individual

The Association Of Shareware Professionals

As Bob Wallace indicates in the accompanying interview, misconceptions abound about shareware, from the programmer who figures his obligation to support a shareware product ends when he uploads it to a BBS to the user who buys one of those "free" software disks at a swap meet, regularly uses \$500 worth of software without registering it, and thinks he's getting a great deal.

A great deal of software is also released by its author into the public domain, where it is not copyrighted and is, in fact, free and freely distributed with no strings attached. No documentation and no product support either, usually, free lunches being no more abundant in the software industry than elsewhere. Shareware, on the other hand, is copyrighted by its author, who allows it to be freely distributed and offers documentation and support to those who pay a relatively nominal registration fee. It's an honor system that works fairly well.

The Association of Shareware Professionals is an organization of shareware publishers intended to make shareware a win-win situation for programmers, users, and the industry, whether it's helping the wizard who's just discovered that proficiency in C is not necessarily transferable to formulating a business plan, or the user who sent off a registration fee back in 1985 and hasn't heard a word from the author since.

Says Marshall Magee, whose *Automenu* is one of the most successful shareware products available, and who co-founded the ASP, "One of the things the ASP does for a lot of authors is to bring out subtle business points that they might not realize on their own, such as responding to a user's payment for their product.

"There's not standards in the organization that say if someone sends you 50 bucks, that you have to send them a manual. There's nothing that says that. What we expect each member to do is respond to the check in terms of either a letter saying thank you, or a receipt. They might offer additional technical support via access to a telephone number, and/or maybe a printed manual.

"We [Magee Enterprises, which publishes *Auto-*

menu] offer a professionally printed manual, technical support through CompuServe and a bulletin board and a telephone, an actual package—we offer the full range of services that you would have with any major software company. You'll find the same with Buttonware and Quicksoft and a few other companies."

Magee says that the range of support services a shareware company offers tends to grow as the company itself grows and prospers. Toward this purpose, the Association offers its members advice on subjects from mass disk duplication to effective advertising.

The ASP has recently adopted the practice of having an ombudsman whose specific job is to attempt to resolve user problems with particular members. Members' software carries the message: "This program is produced by a member of the Association of Shareware Professionals. ASP wants to make sure that the shareware principle works for you. If you are unable to resolve a shareware-related problem with an ASP member by contacting a member directly, ASP may be able to help. The ASP ombudsman can help you resolve a dispute or problem with an ASP member, but does not provide technical support for members' products. Please write to the ASP Ombudsman, at PO Box 5786, Bellevue, WA 98006, or send a CompuServe message via EasyPlex to ASP Ombudsman, 70007,3536."

Magee notes that essentially the same issues affect both the conventional and the shareware channels of distribution. "I tell people, 'If you're trying to decide whether to release this program as shareware, would you release this program and try to sell it through traditional channels? Would you try to sell the thing through Egghead?' And if they say, 'No way, man, I don't have any of this...' I say, 'Well, then I wouldn't really waste my time on shareware either. It's got to be commercial quality.'"

"You're asking people a lot, digging into their back pocket and pulling out that checkbook, write you a check, put it in an envelope, and mail it off to an address that they might not know anything about. You're really asking a lot, so they've got to have a lot of good reasons to support it." ■



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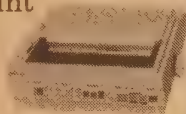


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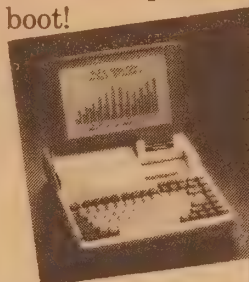
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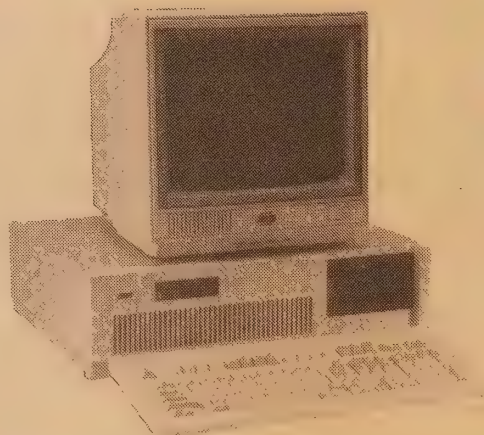


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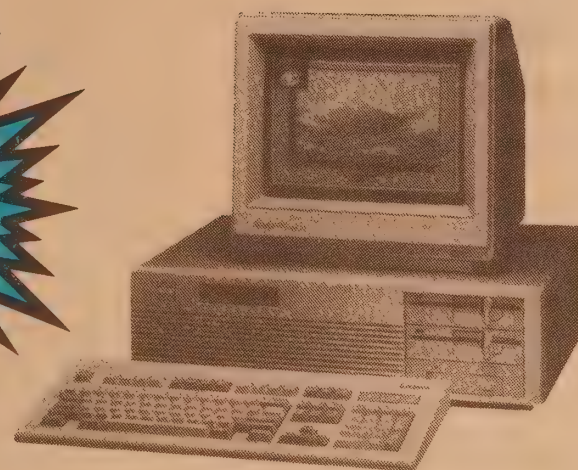
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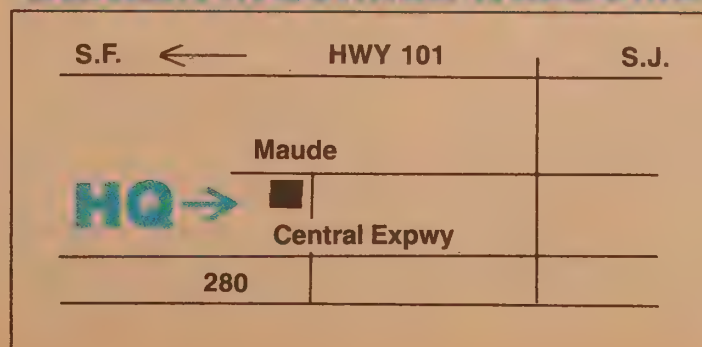
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"Word processing is such a creative tool, and you get so involved with it and use it so many hours a day, it has to feel right, not just have the right features. So I felt people should be able to use it and really decide that they like it first, and then buy it."

registrations.

What's the current version of the product?

We're up to 3.0, actually 3.02. They're very similar, there are just some bug fixes. But 3.0 is the new version. Edits large files and has columns and does lots of new things.

So you're mainly going after people who use word processing for creative tasks rather than the rank-and-file office word processor?

That's true. That's true. I like working with creative people, and I think we have more creative users. I wouldn't mind helping the rank and file as well—I mean, if they want to use it—but the people we really go after are creative, independent, usually intelligent. So we try to make it very flexible for them, and very fast, and have a lot of features, which seems to be what they want.

Do you know of any typical applications that people use PC-Write for, like scripting for example?

It's hard to say. Word processing—there's so many things you can do. People send us books they've done with *PC-Write*, magazines, articles, business reports. We know we have a lot of people with advanced degrees, so there's probably a lot of scientific articles and journal articles and things like that. We are used quite a bit in universities, so there's a lot of reports and student documents.

Do you support older versions as well as the current one?

We do.

How much of a nightmare does that get to be?

It's not too bad—many of our early support people are still with us, so they tend to get the early version questions. There are a couple of classic versions—2.4, 2.55, 2.71, and now 3.0.

We will be doing a simplified version. I think many people are using the older versions because they want a simpler product, and I think when we come out with a simpler product many of them will upgrade.

Does that mean that you think 3.0 is not simple enough?

No. 3.0 is pretty complicated—there's the law of requisite variety that if you want to do complicated things you need a complicated tool. (laughs) I don't see any way around that. We do add more menus and we added reminder lines and more help, so we did add some features to make it easier to use. We put in a special new feature that if you have paragraphs with bullets that are justified, it doesn't try to justify between the bullet and the first letter of the paragraph. When you get down to that level, you can't avoid being complicated.

What made you decide to go with parallel columns rather than snaking newspaper columns in the new version?

Well, I have a bias toward what I call WYSIWIF—what you see is what's in the file. WYSIWYG, what you see is what you get, is important, but WYSIWIF is also important. So I like supporting standard ascii files, and I did columns that way, so when you see a column on the screen it's actually in there as columns.

You're doing a new version for OS/2? What are the advantages you see to moving PC-Write to OS/2?

I like OS/2. I don't know when it will be popular enough for us to release a version and do a lot of work on it. But OS/2 is the first operating system designed where people are expensive and computers are cheap. All the other multitasking operating systems were designed where computers were expensive and people were cheap. There are some very subtle things going on in OS/2 with multitasking having both threads and processes with their scheduler to make sure that the person always comes first. They don't have to wait, there's never any little interruptions, and I think that's the way the world should be. That's the way—hardware is so cheap now that that's the way to

design things.

So is speed the major consideration, or are there actual things that people will be able to do with the word processor that they can't do with DOS?

The biggest advantage of OS/2, really, is larger memory spaces. Straightforward larger memory spaces. And then I can do things as a programmer with OS/2's multitasking—people may not realize that there's multitasking going on, but especially in a word processor it's nice to say, okay, we have one program that runs the keyboard, one program that runs the disk, and one program that runs the screen, and one program that runs the printer, and they all run at the same time.

Would that include maybe opening more than two documents, maybe three or four documents at the same time?

Not as much. I expect to do that—we do two at once in DOS, and I expect to do multiple ones pretty soon, but if you wanted to print at the same time you edit, or repage a document while you're editing, then it's handy to have these multiple tasks.

"The bottom line is—the bottom line. Do we have enough money coming in to pay all the employees, and print manuals, and things like that? And whether we make a certain amount of money because 10% of the people are registering, or 20%, really doesn't make a difference. The people who don't register are simply potential buyers."

Usually when you get into multiple documents, you're really only doing one document at a time. You don't really edit two documents at once.

Can you get rid of the options you don't need so you don't have all that extra baggage following you around hogging your system?

Well, that's one of the advantages of OS/2, actually—they have what's called dynamic linking, dynamic binding, which means you can not have the whole program be one big monolithic thing, but just link it together as you need it, bring in features as you need them. That's pretty handy—that's something that's pretty innovative. I don't know anybody really using it yet, but it's well designed.

You're working on a new simplified version of PC-Write—what do you think are the essential features users want that you're going to include?

We will keep most of the standard editing keys and cursor movement keys and a little bit of formatting—double spacing, headers, a few things like that. But we won't have the advanced formatting—that's the main thing we will not have. We won't have mailmerge... We're now doing a survey to find what features people want in the simplified versions and what they don't.

What are the advantages and disadvantages involved in more direct support of things like graphics, automatic index generation...

Those are all separate questions.

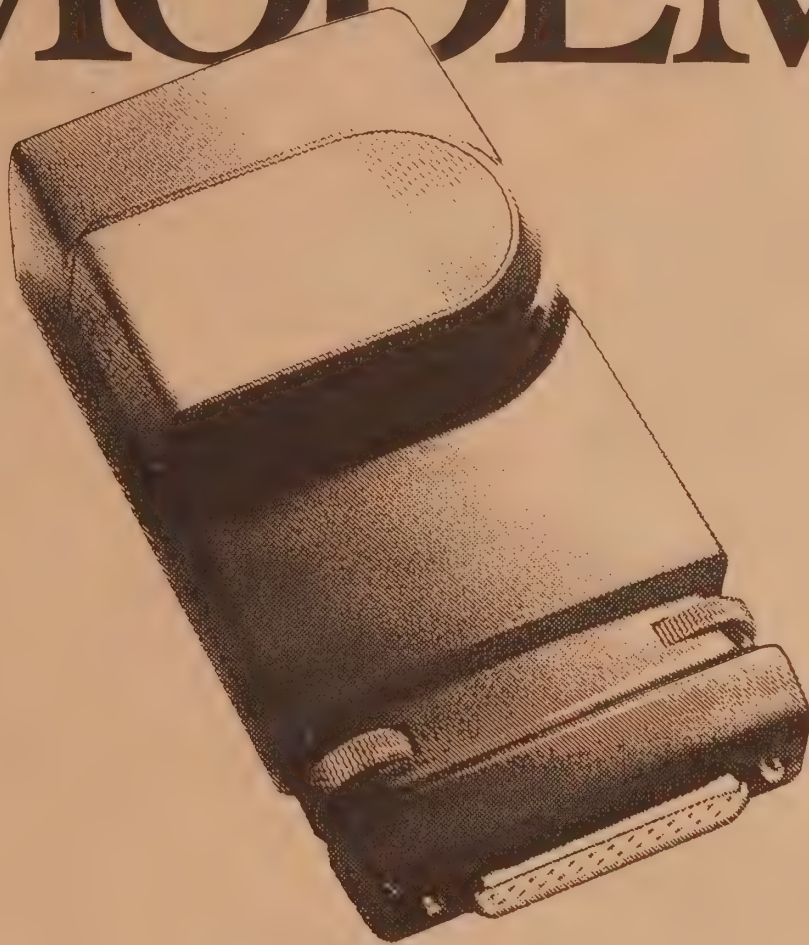
I should back up one step. We have a catalog now of products that work well with *PC-Write*, and one of those products is called *Inset*. *Inset* is a way of using *PC-Write*, seeing graphics in the file. So you can be editing along and look at your graphic, edit the graphic, and go back and forth. It's a good way of doing it—we're hoping to tie *Inset* closer to *PC-Write*, so I'm working on doing more with that. Graphics is a very important element to documents, but I would rather work with other people's graphics packages than try to come up with our own.

Do you find that supporting all the zillion different formats of graphics is a problem?

The *Inset* people have a converter called *Hijaak*, which converts between formats. When we do get into OS/2 and Presentation Manager, I hope that their Dynamic Data Exchange and Rich Text Format and Tagged Image File Format will be formats we can use, so we can import other people's graphics.

The *PC-Write* and Friends booklet

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was a really good idea—have you found any products recently that you intend to add to the catalog?

We're just going through an evaluation to find out what products did well in the old catalog. I've got a lot of products that we've been collecting that may be real exciting, but until we know what people want, we haven't really sat down and evaluated which ones.

What kind of feedback to you get from your users?

Quite a lot of it—the features they want, the way they think things should work. That's why I come to the Computer Faires, to talk to users.

In some ways Quicksoft is one of the last holdouts in the shareware world.

Ah, it's true.

A lot of formerly shareware products are now commercial—PC-Talk, Pro-comm, Red Ryder in the Mac world.

Yeah, Buttonware and Quicksoft are two of the main ones now.

What do you think has enabled you to run such a thriving business on the shareware model when it hasn't worked so well for other people?

Well, one reason it doesn't work for other shareware people, I think, is that some programmers use shareware as a way of avoiding marketing, and avoiding having a company. They think when you put a shareware screen up, your responsibility is over. And really it's just begun.

I approach shareware as a way of being customer-oriented, and I think that's important. I don't know why more companies don't use shareware, actually.

What are the advantages from your standpoint?

The customers are satisfied. They're happy. They like the software—and if they try it and they don't like it, they don't register, and that's fine. I'd rather have satisfied customers. It's out there a lot. It's very easy for people to try it, be exposed to it. The bulletin boards have it, the user groups have it, most campuses have it now. So it's very available, and that means that a lot of people see it and are exposed to it, and that's good for us. I think more people buy it because it's shareware than people *don't* buy it because it's shareware. Which is the way you'd analyze these things from a marketing standpoint—what difference does shareware make? I think it makes a positive difference.

Some kinds of software doesn't work well with shareware—utilities. Games don't tend to work as well. But word processing is especially good for shareware, because it's an appli-

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register, the
more people
will register."**

cation where the feel is very important. It's a creative application. That's where people are very particular—people love arguing about their word processor—it's a relentless issue. There'll always be many word processors.

Some people are hesitant about PC-Write because its function key interface strikes them as being very complicated, and yet at the same time WordPerfect, which has an equally complicated interface, appears intuitive to them, or so they say. Do you think that might have to do with WordPerfect's approach to its help system, the fact that they provide visual templates in the help system for the users to visualize the key-board layout?

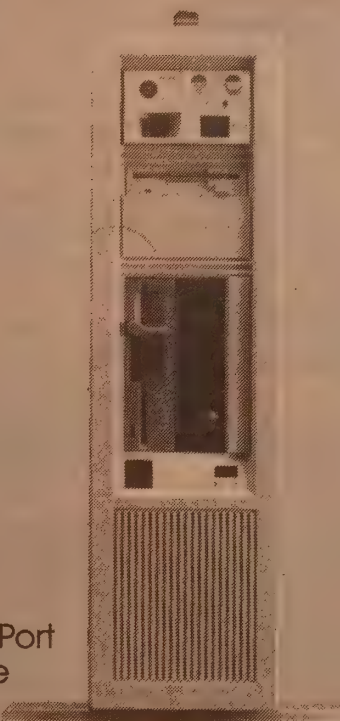
I think it's more that there's different ways that people think, different modalities. Different strokes for different folks. (laughs) Some people love function keys, they tend to be very tactile people. They'll say, "I feel for you." Some people like the icons and the mouse, and they'll say, "Oh, I see where you're coming from." They're very visual people. Some people like command words; they like saying "Cursor move Left" or "CML" for Cursor Move Left. And

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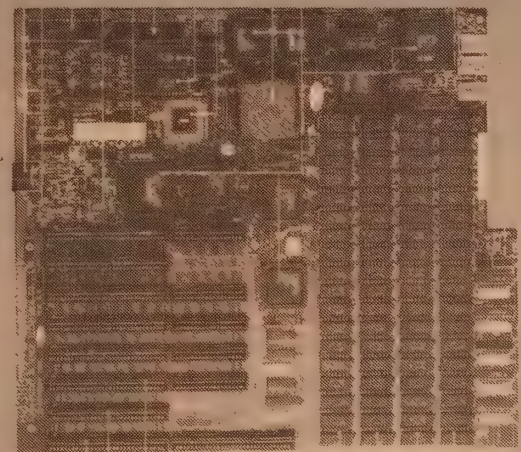
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they'll say, "Oh, I hear what you're saying." So there are just different modalities, and that's why I think there'll always be many word processors, or at least many user interfaces.

A standard user interface is not what people really need. The graphical user interface is very important. We will be supporting that. But a standard user interface is only for the standard human personality—and the standard human personality with an infinite capacity for boredom. And sure enough, many corporations hire exactly that kind of person, but many people prefer having more choices. Especially creative people.

If you look at stereo systems, all stereo systems are a little bit different. Their user interfaces are varied. That's an example of a complicated intellectual task, I feel. And I feel that some people like moving sliders and some people like turning knobs and some people like pushing buttons, and I think it's the same with a creative computer tool. People like different ways of getting at it.

One of the big strengths of the Mac is the relative consistency of the interface, and on the other hand it seems that the authors tend to leave in the software about three different ways of doing the same thing—like you can eject a disk by dragging it to the trash, or by typing COMMAND-E, or by choosing Eject from the pull-down menu.

Yeah, and that's important. We provide a variety of ways to do any one thing, and that's useful. I think at some point we will have a version where the standard user interface is an option. When the standard user interface for the PC evolves, I think we will have that as one of the options. But having a configurable user interface is very important also, and having our own user interface, which is more like the Lotus interface, actually, is also an important thing. Our existing user base will want to keep the same interface, because that's, maybe, why they bought the product.

So I think multiple user interfaces will make a lot of sense.

Is this standard user interface a proposed standard that people are addressing?

There are some specifications from IBM for what they call System Application Architecture, and that has as part of it a standard user interface. They have revised that recently as they learn more about it, and many parts of it I don't particularly like. They assign all the function keys, some to rather obscure operations.

The standard itself is evolving. There will be a standard, but it's evolving.

Most applications are very differ-

ent. And the differences between the applications, I think, tend to dominate what people have to learn. Just the difference between a word processor and a spreadsheet is so great...

PC-Write has the simplest method of moving blocks of any word processor that I've seen—one key instead of three or four. The same key moves everything—one key to delete blocks, one key to add 'em, and never have to remember another key.

We actually have a Move key. Many word processors use the Delete key, and then if you want to move you undelete. I don't think people like deleting something they want to keep, even though they know that's the way to do it, and intellectually they understand it, it's kinda scary. So I was careful to leave a Move key—I think that's useful.

What are the tradeoffs of supporting more high-powered features, like automatic index generation, as opposed to what it would cost a user to put that stuff in?

Well, we've augmented the index generation to some extent. If you create a file with a list of the words you want to index, we will now find every occurrence of those words; you hit one key if you want it to be in your index, and it automatically inserts an index term. I've seen automatically generated indices that simply find all the words and generate an index indexing all the words, but a professional indexer would cringe. A good index requires a lot of thought.

Your ruler line now has more formatting options than either Multi-Mate or Microsoft Word. What made you add all of those enhanced margin features?

People asked for them. (laughs) It was all motivated by what people wanted.

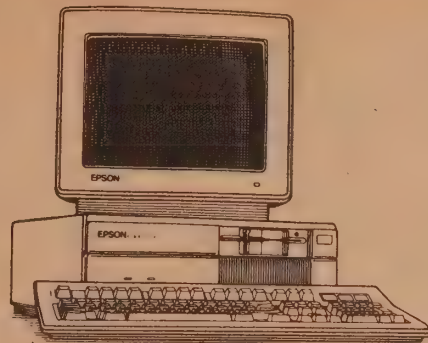
The dictionary ignores one- and two-letter words. What are the advantages of the algorithm ignoring one- and two-letter words in the spell checking?

Well, one-letter words—often you have an outline, and you say this is item C or item X. And there aren't many one-letter words, so certainly [ignoring] one-letter words makes sense. There are also a lot of two-letter abbreviations, but some people don't like it that we ignore two-letter words, and I may put in an option to allow two-letter words or disallow two-letter words.

Is the code still Pascal for PC-Write?

It's about 40% Pascal, 60% assembly language. That would make it very difficult to go to a Mac. It's so much 8086-specific and IBM PC-

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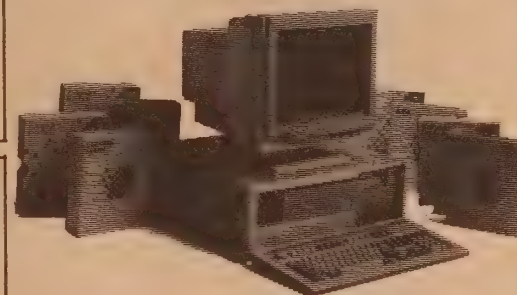
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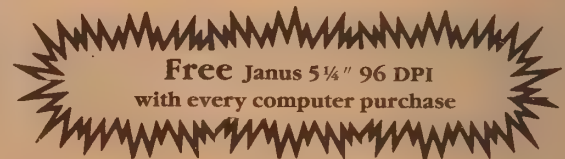
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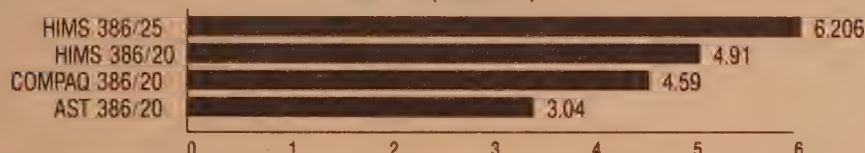
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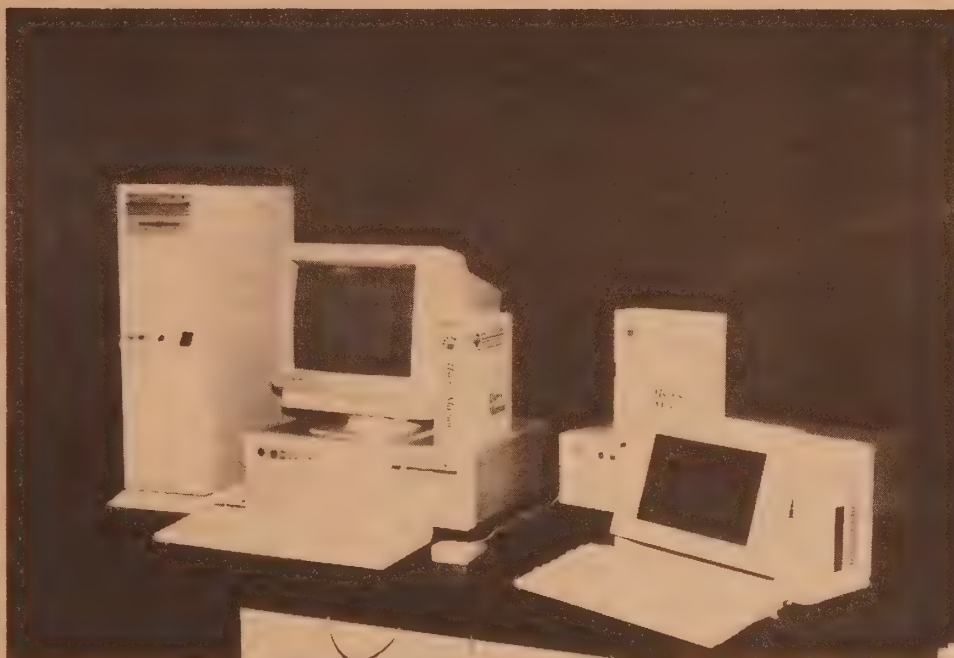
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Dual FD/HD Controller	1:1 MFM	1:1 MFM	1:1 MFM	2:1 MFM	2:1 MFM
I/O Ports	2s, 1p	2s, 1p	2s, 1p	2s, 1p	2s, 1p
Special Slot	1 = 32 bit	2 = 32 bit	1 = Fast Slot	1 = Fast Slot	1 = Fast Slot
Keyboard	101 Enhanced	101 Enhanced	101 Enhanced	101 Enhanced	101 Enhanced
Bios	AMI	AMI	AMI	AMI	AMI
Landmark	42/33	28/22	21	20.8	16
Norton SI	32/24.7	23/18.7	18.7	18.7	15.3

The above systems are available in 5 Models: Model 50M, 70M, 110R, 150ES, 300ES

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"Some programmers use shareware as a way of avoiding marketing, and avoiding having a company. They think when you put a shareware screen up, your responsibility is over. And really it's just begun. I approach shareware as a way of being customer-oriented."

specific, it just would not port well.

That accounts for the speed people often remark on?

Yeah, that's why it's so fast, and I'd rather be a fast efficient word processor on one platform than kind of second best on a bunch of platforms. Although I like the Mac.

Have you ever looked at Xywrite?

Oh yes. I consider them our closest competitor in philosophy. They're also very fast, they're also used by creative people. We have more users, I'm sure, but they probably have higher sales levels. They're more a verbal word processor—it's more command-name oriented. We are more function-key oriented, so the interfaces are different.

Theirs comes from a mainframe system.

That's their roots, and our roots are strictly micros.

Do you anticipate porting to other machines eventually?

As long as it's a -286 or a -386...

As long as it's an Intel machine, we could work with it. We could do a UNIX X-Windows version if the demand was there.

On college campuses the demand might well be there.

Maybe. It's hard to say. The average student can still afford a PC compat-

ible more than a Sun or even a Mac.

But Suns are pretty entrenched in a lot of departments, with the faculty anyway, and something like the 386i would be a natural transition point.

That would make sense. I tried running *PC-Write* under UNIX in a window at the Hackers Conference, and it worked fine, so we should work in that environment. I also know that the NeXT machine is using Rich Text Format, and I'm expecting to do a RTF output translation, as we have with Document Content Architecture, which isn't a good standard, but is a fairly universal standard. And RTF is both a good standard and could be pretty well entrenched with NeXT and Microsoft behind it. So I could see us doing that translator—that's something we're actively pursuing now.

So if people could do their reports in their dorm room with their compatible, with *PC-Write*, then write it out as Rich Text Format and bring it over to the NeXT machine and do final formatting, that would work pretty well.

How do you feel about working more closely with the desktop publishing programs? Most desktop publishing programs consider formatted text to be bold and underlined, and maybe tab stops, whereas there are all kinds of word processor formatting commands that get lost in the transition.

Well, we do a *PageMaker* filter and we bring over what we can—certainly the fonts and a few things. I'm looking now at a *Ventura* translator. For that, I think the new Light version, the *PC-Write Light*, would be more appropriate.

What you need in that situation is a glorified text editor.

A fast, easy text editor, not too complicated, and then run it off into *PageMaker* or *Ventura*.

The other thing we help do is add more desktop publishing features, so we have columns, you can add kerning. We need a richer font system. So we'll be adding more desktop publishing features, as well as more creative features, kind of front-end features like outlining and hypertext ad things like that.

Do you see the possibility of creating hypertext program modules, that could be constructed in *PC-Write* and then run by themselves?

Yeah, that makes sense. Where you have multiple files, and hypertext links between the files. We are coming out with a product called *PC-Look*, which has hypertext links within a file from page to page. That'll be an interesting product, a RAM-resident product. I'm very excited by

hypertext, so I expect to do more with it.

There's many kinds of things which come under the umbrella of hypertext, and I'm looking at it especially from the writer's point of view, how a writer could use hypertext both to help with the writing process and to create hypertext documents. But at first I think we'll use it just to help with the writing process. So the author's manuscript in *PC-Write* might have a section for characters and a section for locations, a section for the timeline, a section for the geography, so whatever kind of people and world they're creating, they can more easily keep track of it using *PC-Write*. Then when they finally send the novel off to the publisher, it's still a regular print novel, but if they're writing about Dr. Doolittle they'll know whether he's right-handed or left-handed because they hit the character key and they go to the Doolittle page and it says he's whatever.

It might be possible to check a manuscript to see if there are inconsistencies.

Eventually. Grammar-checkers are moving in that direction, of actually understanding the sentence and understanding the meaning and keeping track of it. That's many years away, but I try to keep up on that research.

"I'm discovering it's a little more challenging to actually manage the people than to write the code. One reason we did not grow well as a company in '87 and '88 is that I was trying to be president and programmer and simply not doing an adequate job on both of those together."

It's not that uncommon to be reading a book and find something happening two thirds of the way through that's inconsistent with something that happened early on, and hypertext would be a good tool for keeping track of that stuff.

A tool to help the writer be consistent makes a lot of sense. We have tools to help writers with their spelling and their vocabulary. Now additional tools to help writers keep track of their characters and the environments they're writing about.

Are you still president of the shareware association?

No. I support the Association of Shareware Professionals [see sidebar], I like what they're doing, but I have not been active in the group. The group is especially good for helping beginning shareware authors, and consequently they haven't been as useful to me personally, but their principles are very good. Their vendor standards, author standards.

Do you feel that shareware is still a viable, open field for new authors?

It's still a very good way of getting started if you don't have the money for marketing. It can be a way of getting the product out there, getting some exposure for it. If you do intend to start a software company, get into the marketing and get into having employees, it can be a good way of getting started.

Would you say the competition is getting fiercer?

It's more consolidated now. I don't worry as much about competition as some people. Everybody is different, every program is different, and different programs appeal to different people. So I don't think of us as competing with these other products, although we do.

When we come out in a product review and we're compared to Microsoft *Word* and *WordPerfect*, I feel very good. But I don't think about competition as much; I think more about are we satisfying the users. If I focus on our users, I feel we'll do the right thing and do well. If I focus on the competition, or what the magazines say—those things are useful, the magazine people tend to be users, for example—but just because somebody else is doing it is not necessarily the reason to do it. Occasionally we will put in a feature simply because a number of magazines say that we need it, even though we don't have users who are actively asking for it.

So user input is more important in shaping the things you do than critical reviews?

Reviewers are users. They're both important. I can't say, between those

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6. Slots/Drive Bays

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7. DOS 3.3 is standard. 8. OS/2

Most vendors like to hide the fact that OS/2 is vendor level specific. This means vendors seeking to have OS/2 compatibility have to provide you with their version of OS/2. EVEREX has a version OS/2 available as an option for their machines.

9. Warranty

EVEREX computers and all EVEREX components -- including hard disks, monitors, and peripherals come with a full year of on-site warranty. This service is provided through NCS which has 106 locations nationwide.

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All EVEREX 286 computers with the exception of the 286/20 can be upgraded to a 386 through a user installable kit. This transforms your 286 PC into a 386 using the 80386SX.

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Programmable LED	Yes	No	No	No	No
Slots/Drive Bay	8/5	8/5	8/5	3/2	3/2
OS/2 Support	Yes	Yes	Yes	Yes	Yes
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two, that one is more important than the other. But both of those are more important than looking at what the other word processors are doing. I don't feel that we need to do what they do—if all the others are doing one thing, that may mean that we should do something different and give people a choice.

Are any of your users using PC-Write in foreign languages?

Oh yes. There is foreign character support using the Accent key, and we do work with quite a few European publishers. The German version is popular, the French version is popular. We also have a British version.

And this is franchised out to publishers in the respective countries?

I found publishers over there who want to do the translation, the marketing, the support, and really make a better product. They know what their culture is like. It would be presumptuous of me to tell them how to do things. I encourage them to do shareware, but none of them have done it. The German publisher sells diskettes separately from manuals, and he sells manuals separately from the support. Which we also do. It's not shareware in that you can't copy the diskettes, but it's that kind of thing where you can get the diskettes cheaply and try it and see if you like it. He has his own way of doing it. I support what they feel works best.

Do you write the code yourself?

Up to now I have been writing the code. I'm discovering it's a little more challenging to actually manage the people than to write the code. I still like doing a lot of the design work, and I will be doing the PC-Write Light version, but we have an excellent programmer, and are looking for a Windows programmer now. I expect them to take over the bulk of the PC-Write work. One reason we did not grow well as a company in '87 and '88 is that I was trying to be president and programmer and simply not doing an adequate job on both of those together.

It's two pretty different functions.

Yeah. Programming is very straightforward. If you say to a program, "What's 2+2?" you always get "4." But if you ask an employee "What's 2+2?"—oh, they'll ask you what it should be, or what you want it to be, or they'll say, "Oh, I'll let you know next week, I'm going on vacation now," or they'll say "I think it's around 3 1/2 or so..." So it's much more challenging working with people, keeping your employees happy, motivated, involved in the company, and yet all going in the same direction.

How do you do it?

Oh, there I have to rely a lot on intuition, and I have to listen. I'm getting much better at listening. It's still difficult if you're the boss, and the president, and the owner, and the programmer, and the designer. It's hard to encourage your employees to say, "Oh, but you're wrong." It's difficult to tell them that, but of course you want them to do that, and to tell you what they think. And then you want to tell them what your final decision is, and then you want them to support you. So it's tricky.

What kind of advice would you give someone who's thinking of starting a shareware business with his product?

Well, I'd first ask, do they want to start a software company? And make sure they understand what that means. And if they say "Yes, I want to start a company," then I would ask what kind of product. Is it a product which works well as shareware? Is it a product where you need to try it first, and also, is it a product where the extra benefits of paying a registration fee are useful? Does it need a manual? Does it need support? Or somebody has a tax program which needs to be updated every year? There are different reasons why you might want to register. And if those are true, then I would recommend shareware, yes. ■

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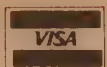
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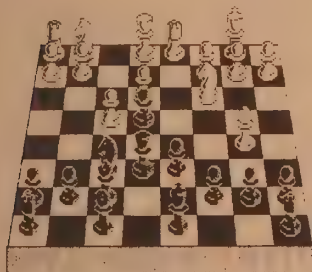
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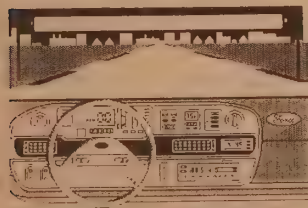


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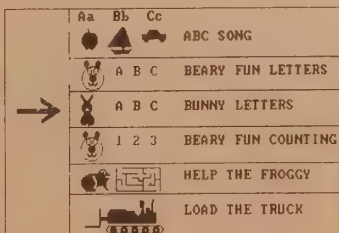
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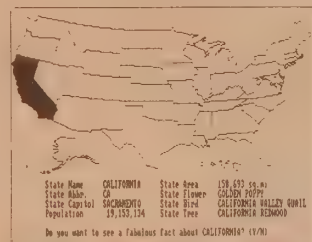
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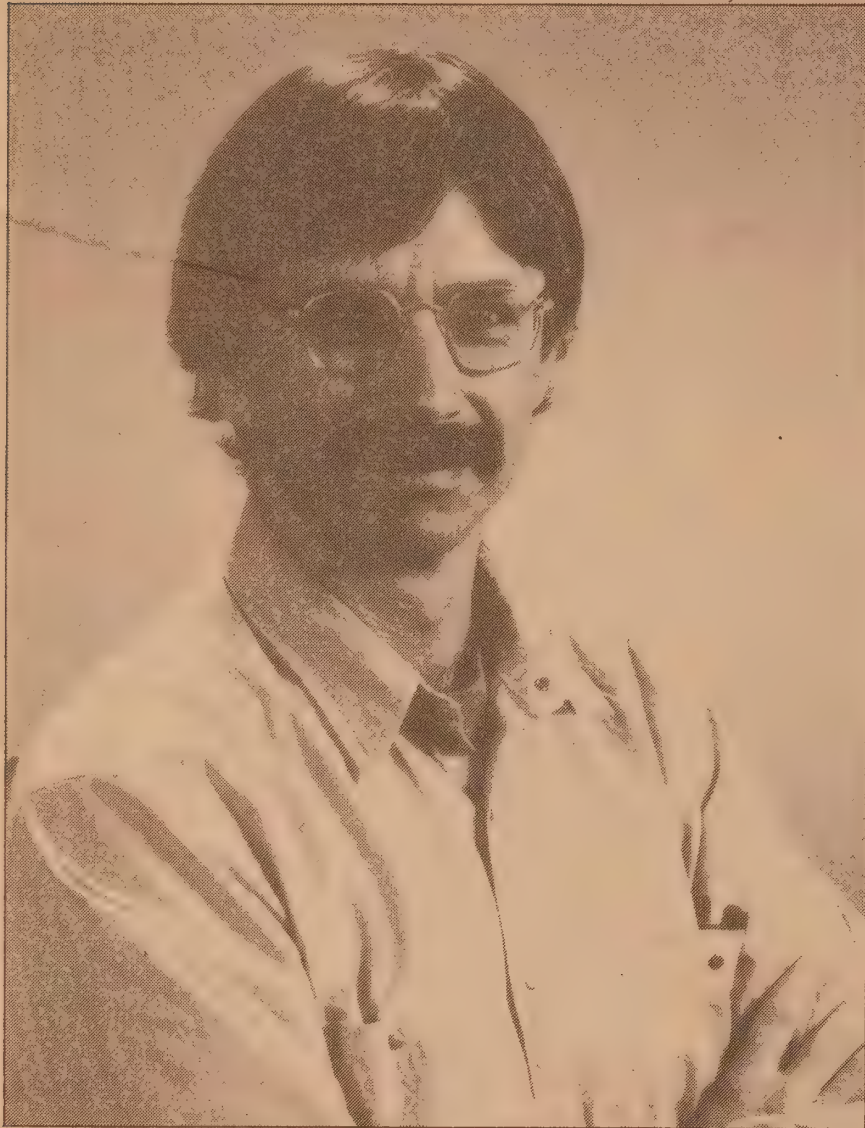
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Dan Silva:

The First American Interview

Photo courtesy of Electronic Arts



The Author Of *Deluxe Paint* Meets The Press

By Ben and Jean Means

More than just an upgrade, *Deluxe Paint 3* is three integrated programs in one new bundle of Amiga graphic joy: advanced graphics with tint, brush wrapping, direct overscan, extra-halfbrite, and much, much more; a titling program with everything but built-in page transitions; and easy animation with AnimPaint, which paints animations with multi-frame Anim Brushes to create effects like Dan Silva pedaling and juggling. Best of all, the power of *Deluxe Paint 3* isn't buried behind some reverse Polish user interface. It's right up front, just daring you to create an animated masterpiece with a simple-to-use Move requester that defines the direction and distance your brush travels, its rotation, and the number of frames for playback.

So here for the first time in the pages of an American magazine, *MicroTimes* brings you an exclusive look at the father of the *D Paint* series, Dan Silva. Fresh from Europe, where hordes of small Amiga magazines had interviewed him, he defied *MicroTimes* to find a question that he hadn't already been asked. With the spirit of adventure, we rose to his challenge to create the ultimate original question. In fact, we were so eager to test our ingenuity, we led off with it, to Dan's amusement.

Was it hard learning to juggle while riding a unicycle?

Well, I have to confess that was all done through electronic trickery. In fact, I can't ride a unicycle; I can actually juggle a little bit, but two balls, not three.

How did you get started programming?

I did a lot of programming at Stanford while getting my mechanical engineering degree. We designed mechanical linkages on computer programs with three-dimensional

kinematics, a close relative to three-dimensional computer graphics. We also worked with LISP on the PDP-10 systems at the AI lab to solve equations through algebraic manipulation. So I got a taste of interactive computing and programming in LISP; it opened my mind to the possibility of what you could do beyond programming in Fortran, which was pretty limited.

As soon as I heard of computer graphics, I started trying to wangle ways to get into it. While I was working at NASA Ames on scientific applications programming, I managed to get some work in computer graphics and image processing. Next, I worked at Xerox for a couple of years before I got a job offer on a video editor project for Lucasfilm up in Marin County, where I live now. But I wasn't very happy, so I went back to Xerox, where I developed a bit-mapped graphics program called *Doodle*, the precursor to *D Paint*.

How did you come to work for Electronic Arts?

Commuting from Marin down to Xerox PARC was too far, and I realized that personal computers, which were just becoming popular, might provide me with a way to work at home. Tim Mott, Steve Hayes, Dave Maynard, and Steve Shaw from Xerox were starting Electronic Arts, with the idea of developing personal computer software using technology we had developed at Xerox. It sounded perfect for me; I could work at home with all the creative freedom I'd had at Xerox. I also wanted to create a real-world graphics program, unlike Xerox where we were developing all this wonderful technology as an academic exercise that the world never saw.

So I went to work for EA in 1983. After we got beyond the first stages, I started working on *Prism*, an IBM

Deluxe Paint author Dan Silva

In the beginning there were the paint programs. Out of the paint programs arose a great Colossus, *Deluxe Paint*, and it was good...damn good.

Then came the animation programs. Some were cute, some silly, some led to less than professional results. And all were hard to use. There arose great serpents from the CPU deep—the ray tracing programs that stalked the computer firmament, crunching up memory with ravenous gulps.

Still the rift was wide; there were paint programs and there were animation programs, with only rickety bridges to cross the chasm. Deep within the cavernous depths lay the broken remnants of an animator, his deadline missed, his memory smashed, his hard disk a smoldering ruin. He lifted his head and cried out, "Why can there not be an animation

program as easy to use as *Deluxe Paint*?" before falling into a swoon of deep despair.

Far away in a paradise that looked remarkably like Mill Valley, programming wizard Dan Silva looked up from his game of *Go* and said, "*Deluxe Paint* was good. *Deluxe Paint 2* was better...but yes! Why can there not be a paint program that also does easy animation? I must set myself to create one."

One year and three months later, it was done, and it was good. It was very good indeed.

Deluxe Paint 3 is the Amiga program of the year. No Amiga should be without it! Electronic Arts released *Deluxe Paint* in 1985, just one month after the debut of the Amiga; on March 22 of this year, EA released the meanest, baddest version yet of their award-winning classic—*Deluxe Paint 3*.

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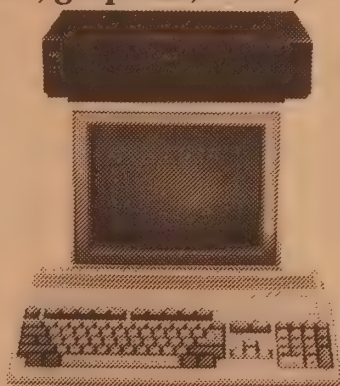
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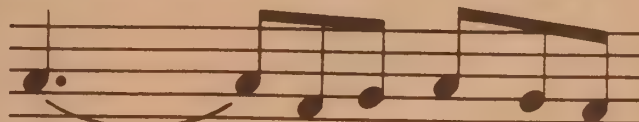
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paint program that was part of our development tools. I was frustrated with IBM's graphics, so I got excited when the Amiga appeared, and I ported *Prism* over to the Amiga, where it turned into *D Paint*.

I added a lot more functionality on the Amiga, by taking advantage of the different graphics modes, more colors, and the blitter, which quickly updates the pixels on the screen. Ever since then I've been doing *D Paint* (laughs). I'm still trying to get finished with it.

How do you create your code?

I use a cross development system where I compile on my IBM, then download to the Amiga. The Amiga is right next to the IBM, and the program is continually compiled, downloaded to the Amiga, and run. The IBM debugger is connected through the Amiga parallel port, so I can be looking at the debug screen on the IBM while I'm running my program on the Amiga, which is really useful. It is really a great debugger, and there's nothing to compare to it that I've ever seen. It's evolved over years and years, and we use it at EA for debugging to all the different target machines.

What's your Amiga setup?

My Amiga setup varies. Right now I've got a Pal 1000 and a regular 1000

with a two-meg card on one and a half-meg card on the other. I did have a system with a hard disk drive for a while, but I gave that up to some people at EA who were using it to develop the art there.

How long was DP3 in the making?

It was a solid year of development. I crept into it because I wanted to support the Amiga. I'm naive, but I always end up getting myself into these things.

Basically in one night of hacking, I created this page flipping stuff, which was fun, and ended up paying the price for over a year since then, trying to make it into an actual program. It's the first step in putting together an idea I've had for a long time, which is simply that paint and animation can be viewed as two sides of the same thing. The same tools you use for paint can be used for animation and vice versa. Paint is just animation where you don't erase, where you just paint on the same frame. I'd like to do more in that direction; this was just a first step in a quick experiment, which turned out to be a little more than I bargained for.

What did it mean in the manual when it said you have "a lifelong fascination with animation?"

I'm not sure what the manual

meant by that. I'm not responsible for these comments they come up with.

Do you have a fine arts or graphics background?

No, but my mechanical engineering background was definitely valuable training. The courses in ME design gave me a way of thinking about programs as products that a lot of programmers don't have. When you think about a computer program as a complete product, it's different than just thinking of what features you can program. Every programmer should study product design if they plan to sell their programs.

I also have a pretty strong background in math; many programmers don't understand the underlying mathematics, and that's too bad, especially in graphics programming where it's very important.

Did you borrow any user interface tips from other programs?

Oh yeah, I'm always stealing any ideas I can. One of my rules is never be too proud to learn from anyone. Even a program that is basically crummy usually has some good ideas in it.

How have high-end graphic systems influenced you?

I've been going to the SIGGRAPH technical paper sessions for years; I

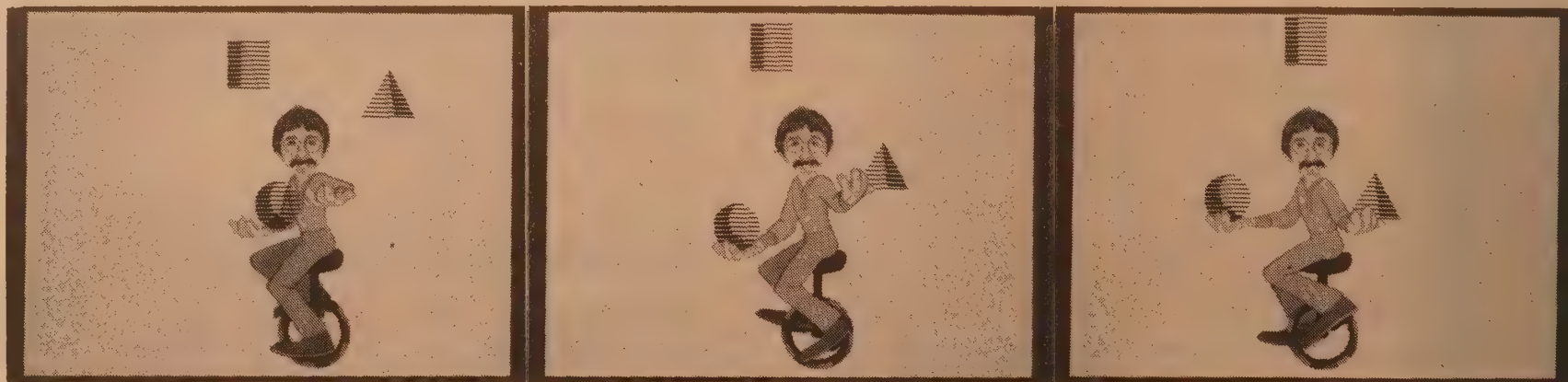
picked up the idea for tint paint from Alvy Ray Smith's paper there. But the *D Paint* interface essentially just evolved out of itself. Although I don't have a formal arts background, I really like painting pictures on the computer, and what I'm trying to do is make that process happen for me. I was influenced by things I had seen, but overall I just sat up nights to paint and implemented features so I could finish that painting. If something was too hard to do by hand, I'd put in a feature to make it possible.

What is your favorite feature?

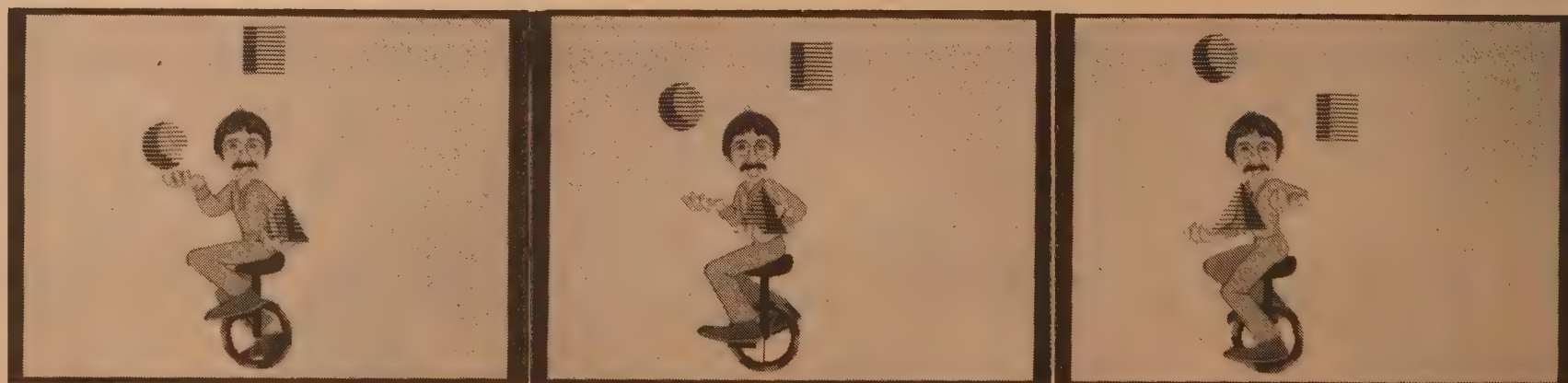
It's more the interaction of the animation with the paint tools that excites me; the combinations of features interact in different ways, too numerous to understand immediately, so it leaves an open-endedness to it. For instance, using wrap fill with animation, you can get the effect of balls with paintings on the surface, rotating in space. We were just playing with that the other day, and that was something I hadn't realized before.

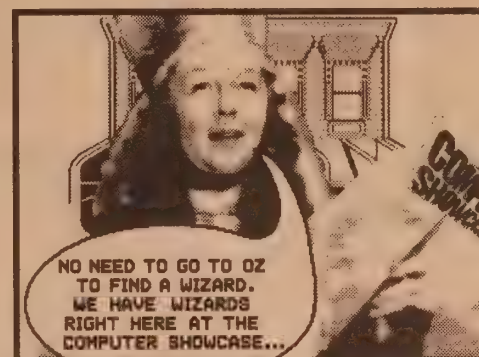
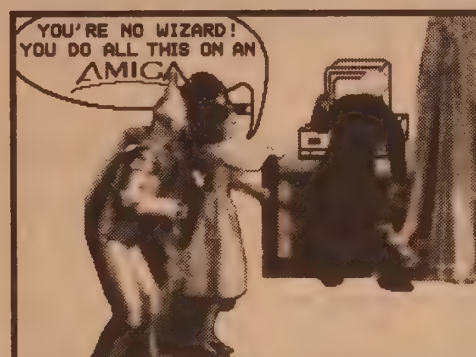
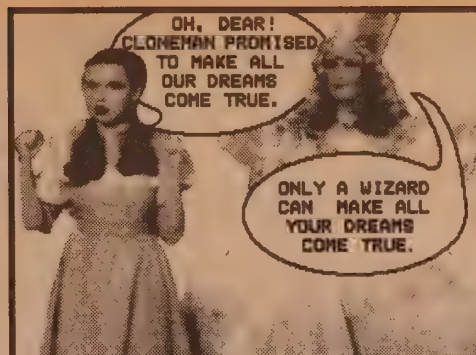
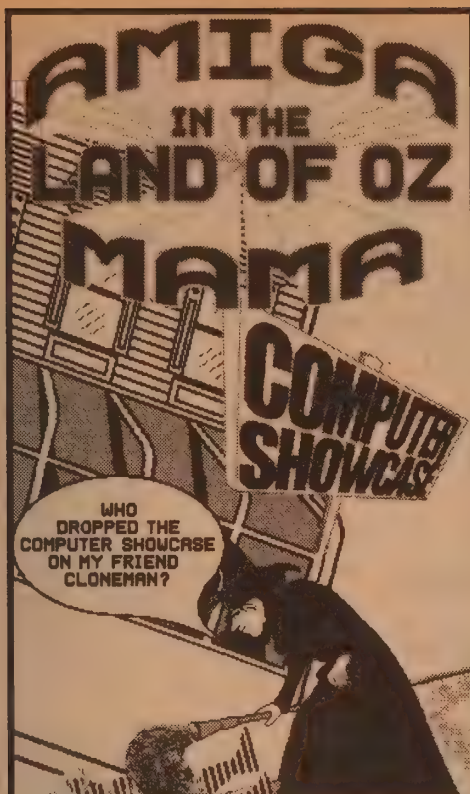
You've gone to 2 1/2D right now. Did you consider going to a full three-dimensional object-oriented approach?

Yes, I have. I've thought of putting in at least a limited set of 3D objects; instead of seeing just a flat brush, you could see a cube or cylinder with the



DPaint animation in which Silva juggles parts of the EA logo while riding a unicycle.





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"Paint and animation can be viewed as two sides of the same thing. The same tools you use for paint can be used for animation and vice versa. Paint is just animation where you don't erase, where you just paint on the same frame."

sides painted to the brush. I think that would be fun. Because essentially I do have a real 3D model; I could move the brush around in 3D and easily extend that to include other objects. He says here, but I don't know, it's probably not that easy.

How are sales on DP3?

Very good!! At this point, it's mostly upgrades, but they've been way beyond predictions. It's just flying out the door, essentially. I recently got a plaque that they give you when you sell 100,000 copies.

I noticed the game of Go is gone now on DP3.

(wistfully) Oh really...

What was the significance of putting the game of Go in DP?

I put that together because I like to play Go and I used that as a Go board. It was just a little plug for Go, which is my favorite game.

You mentioned that you just got back from Europe. What's the Amiga scene like there?

It's a much more important machine over there. I was surprised to learn that there are more Amigas in Germany than there are in the United States.

Was it scary removing the copy protection and then sending it over to Europe?

It was scary removing the copy protection, period. Some pirated versions of DP3 got out early on bulletin boards—they weren't really DP3, they were some version that was probably 2.8 something that the pirates had renumbered as 3.0. But sales seem to be real strong, and it could be that that actually helped us because it served as advertising.

When you're not spending 10 to 12 hours a day programming, what do you do for fun?

I like to play music on my keyboard

setup and guitar. And I like to go for hikes up on Mount Tamalpais, which I love. In Mill Valley, you can get up to the mountain and away from the office in a few minutes or drive to Stinson Beach in 15 minutes. I like Mill Valley because I can just walk out the door to be on vacation. I don't have to get a plane ticket anywhere, though I get up in the Sierras whenever possible. I'm really a mountain freak.

What's next?

I don't know. I'm going to let DP on the Amiga sit for a while. One of my fantasies is to integrate animation and music in a program that will sync actions and points in the music in a very easy way. That may be too ambitious, but it's one possibility.

It's been 3 1/2 years since DP was released. How has it changed your life?

I feel fulfilled, that I've done something that was really worthwhile, and it just makes me feel better. I'm happy about the way my life's worked out. ■

Copyright © 1989 by Ben and Jean Means. All rights reserved. Ben Faria Means has a confirmed Deluxe Paint habit for which there is no known cure. When exposed to Ben's advanced use of color cycling (available on 44 DPaint data disks), many people have reported feeling seasick. His wife Jean has sought solace with her three cats and hopes that Dan Silva will one day discover a miracle cure.

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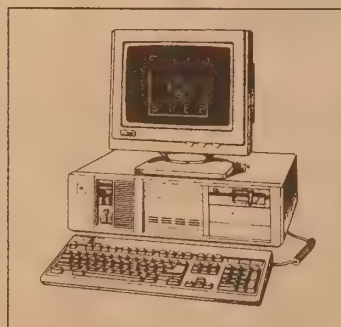
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LANs: The Next Generation

Groupware And Office Automation Herald New Networks

By Wayne A. Yacco

The local-area network, or LAN, began as a benefit to large groups of personal computer users who needed access to common resources and to each other. Nodes on a LAN can share costly equipment and files; they can communicate with each other easily even though they are in different areas, offices, or buildings.

LANs have always had an obvious appeal for larger companies, but far less appeal to the small user who, by and large, preferred to transfer information by diskette or modem. That may be changing due to new classes of applications—group-productivity and office-automation software—which provide benefits based on the currency and collective distribution of the information they provide.

LANs In Large Organizations

When there are dozens or even hundreds of users in an organization, LANs make a lot of sense. They're the easiest way to let users in mutually remote locations communicate with electronic mail (email); they can be used to share especially expensive or scarce resources like printers and large hard disks; they can provide dependable backups of common data; several users can work with the same program or modify the same database. For large groups, these activities are impractical without networking because of the number of users or the physical separation of users or resources. So big users have been quick to corral their herds of desktop computers into a network environment.

Most users, though, aren't part of those vast, networked organizations. Today there are over 20 million personal computers and only about 200,000 local-area networks. It is estimated by companies like Novell, the leading vendor of LAN software, that an average LAN has about eight nodes or workstations on it. This implies that only about eight percent of the personal computers in use are networked.

Sneaker Net

One of the reasons that more comput-

Office automation products like WordPerfect Office are making LANs more attractive to relatively small businesses

ers aren't yet networked is that smaller organizations are likely to use sneaker net for resource sharing. That is, when users need to transfer a file, or talk to the worker in the next cubicle or office, they put on their sneakers and tiptoe on over there for a few minutes. Sneaker net can offer the advantage of a shared cup of coffee and, if you're lucky, maybe a donut.

Sneaker net is a big buzzword right now with the networking community. LAN vendors would like to convert everyone from data with donuts to their still-fairly-expensive hardware. But before they'll dunk thousands into the basket for a few cards, some cables, and software, many companies will continue to take a diskette over to the computer connected to the laser printer for output, or to the unit with the big drive, to transfer an occasional file.

Most smaller companies can justify the cost of a LAN by the need for specific applications like order entry, inventory management, or some other type of accounting. However, in many smaller companies, accounting applications are done by just one person. Simultaneous access to orders, inventory, or accounting reports isn't likely to be a big incentive.

That's one of the reasons that many small organizations have comfortably managed to avoid networking altogether.

Groupware And Office Automation

Now, though, applications are appearing that offer benefits even to the smaller firm. Companies that have never considered networking for accounting activities are looking at the real-time interaction and centralized-data-management benefits of office automation with the gleam of installation in their eyes. The trend could begin in earnest over the next six to twelve months, as interest in office and group applications, or groupware, turns into budget line items.

Early users of networks exploited every aspect of resource sharing. The next generation of users will primarily be lured by the benefits of centralized file control and/or real-time benefits: access to information and interaction with other users. Increases in productivity can be substantial with networked, real-time applications.

Although small groups may be able to share data without a network, they are less likely to do it with any efficiency. If a few workstations are producing large volumes of documents, networks can offer an effective means of managing them. Centralized files can reduce duplicated processing, storage space, and search effort and enforce adequate backup procedures.

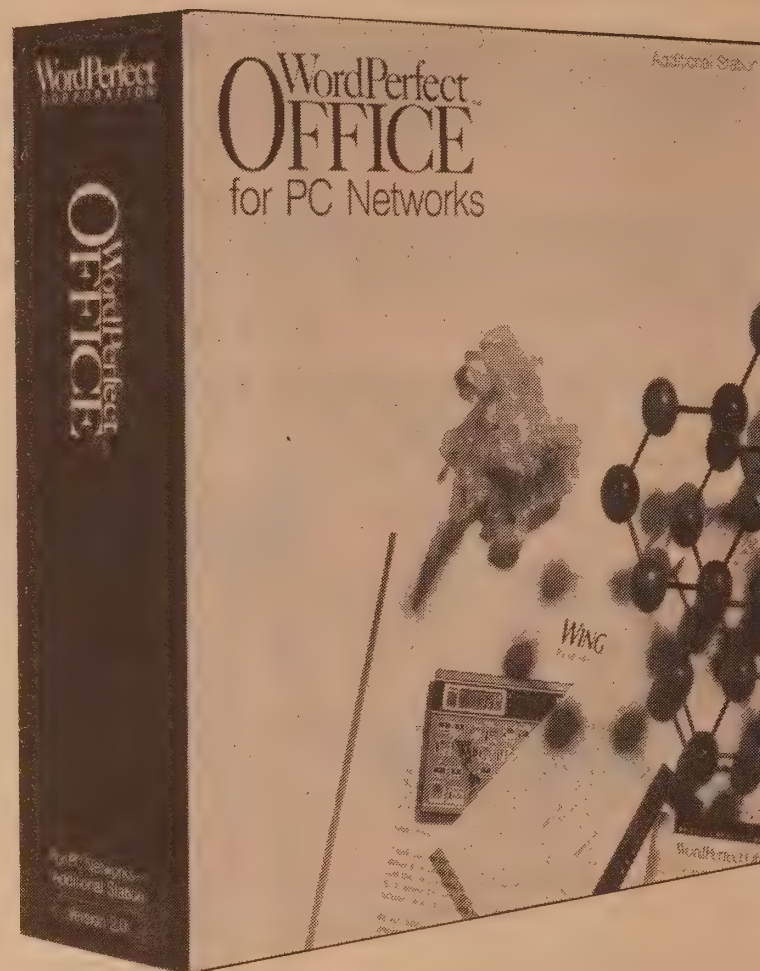
Even when it's possible to share data with sneaker net, it's impractical to do it on a real-time basis. And, certain types of information just aren't valuable unless they're absolutely fresh. For example, a consultant talking to a client may need to make an appointment that includes one or more other staff members. If all of the group calendars are on line, an appointment can be scheduled in real time without conferring directly with several individuals. Off line, the same process may take several iterations before all schedule conflicts are resolved. The delay could mean having to sell the client all over again, when the meeting is confirmed, or losing the job.

The New Generation

One of the earliest scheduling programs is *Network Scheduler* from Powercore, Inc. *Network Scheduler*, originally titled *Sum:Time*, includes a calendar and detailed schedule as well as support utilities for note taking and filing. The latest version extends the scheduling of staff and meeting venues to other resources such as audio-visual equipment. Network security facilities are also included.

WordPerfect Corporation has introduced an office-automation product, *WordPerfect Office*. *Office* combines a task-switching shell to manage applications with a file manager, a notebook (similar to an electronic Rolodex), a calculator, email, calendar with to-do lists and scheduling capabilities, and editors for developing macros and programs. Network security provisions are included.

David Clare, WP's senior manager of PC marketing, is optimistic about potential for *Office* in small organizations. "There's two buying patterns that we have noticed," says Clare



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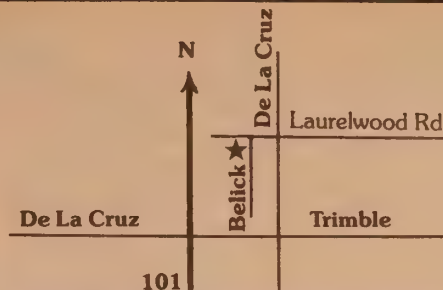
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(NORTON SI = 24.2; Landmark = 29.5)

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(NORTON SI = 18.7; Landmark = 32.2)

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MS DOS 4.01	75

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about the product. "One is where [users] have a network and need software to make the LAN easy to use. The second is where they've purchased *WordPerfect*, and they need to exchange documents but don't have a network yet." Clare has seen the trend toward small networks in *Office* user registrations. "What a LAN gives you is real-time ease of use," he says of the benefits for small systems.

Futuresoft offers a groupware product called *Right Hand Man*. The program is essentially a networked desktop utility with the addition of email and calendar functions: a to-do list and group scheduler. According to

Dealers who sell smaller networks find that almost all of their sales are still made to users with specific application needs.

national sales manager Randall Genser, there are many examples of users purchasing LANs to get the product's real-time functions: "Doctors and lawyers frequently use the package as a standalone application, just changing users to update the scheduler. In the past month alone, I've talked to four groups that are planning to purchase LANs just to use the package. We have a law office that went and invested in a ten-user package before purchasing their LAN."

Support software such as *R2LAN*, *Netremote Plus*, or *Close Up LAN* can be used to provide technical support or training to users on a one-on-one basis. Problems can be solved while they occur in real time.

R2LAN, from DCA, allows a network node to call another node and control its resources as if they were local to the calling node. The same access can be had via modems from, or to, off-LAN workstations through the use of an asynchronous communications server. In addition, nodes can have access between two LANs if both have asynchronous communications servers. Password security and other network management is provided. In addition to providing support, *R2LAN* can be used to initiate unattended operations on a workstation, which can later be accessed for information products (output).

Brightwork Development's *Netre-*



WordPerfect Office offers a variety of office automation functions, including email and scheduling.

mote Plus offers essentially the same capabilities as *R2LAN* but does so by combining two products. One of the products is *Netremote*, which provides remote control of nodes on a network. Because *Netremote* was specifically developed as a LAN application, it has parsimonious memory requirements of just eight to thirty-one kilobytes per node. The *Plus* version bundles *Co/Session*, developed by Triton Technologies, which provides remote capabilities over modems.

Close Up LAN, from Norton-Lambert, provides one-on-one remote access and more. It also supports one-on-many or many-on-one sessions that allow groups of users to interact simultaneously. That makes it ideal for applications like on-line training, where many users can learn from an expert, or critical technical support, where many experts can participate in a diagnosis, simultaneously.

Whenever a group must work with outside clients, a network can provide genuine benefits. Another of these applications is in contact management. Real-time contact management is important if you need to know what other members of a group are telling a client. Contact-management software can maintain the time and date of each contact, telephone numbers, associations and related contacts, and notes on each conversation or meeting. This can be invaluable when partners are working on an account together. Contact software can prevent contradictions or the appearance of conflicting representations that can damage confidence and credibility. It can also eliminate the need for all members of a group to participate in every client meeting or to meet with other group members just to discuss client meetings and minor progress on an account.

Timeslips III Network Edition is a memory-resident client-billing pack-

age from North Edge Software that uses as little as 10 kilobytes of RAM for its overhead when running from optional expanded memory. It will allow users to enter time slips complete with notes about the client contact. Time slips are stored in a database residing on the network file server. The database features passwords protection and record locking. *Timeslips III* also includes a complete accounts-receivable system and can send compatible files to many popular accounting packages.

Time slips are the records that keep accounting and contact information about clients and jobs. Who you are, and what you're doing for which client are required time-slip fields along with the time spent. The rest of a time slip can have any type of notation. A search for any phrase or description can subsequently be conducted throughout the time-slip database.

The program itself can be used to determine the time spent on any activity. An automatic timer can run while the user talks or takes notes during a telephone call or, in the background, while work is being done on a word processor or spreadsheet. When activities on behalf of one client are interrupted by those on behalf of another, a new timer interrupts the previous one while time is kept for the new client. Interrupted time slips can later be resumed, using a last-active-slips key (F8), until all activities are completed.

Timeslips has many of the real-time and data-centralizing features that will attract a new class of user to LANs. Reports, sorted by time, date, client, activity, user, dollars billed, etc., can be used for a tickler function and to-do lists. Any user on the system can view client activities of any other user making it easy to coordinate work for a client or to keep track of progress, commitments, or notes.

North Edge president Mitchell Russo says that the developer took a chance creating the network version of *Timeslips*: "We went out on a limb to release this product because when we looked at the numbers, they did not justify the time and expense needed to create a network edition. What we counted on was people buying networks to use our product. And that's what we've seen happen with our standalone users. Many of them are going out and buying networks because of the network edition availability." Some of the LANs running *Timeslips* have over 200 users, but a majority are under four nodes; almost all are under eight.

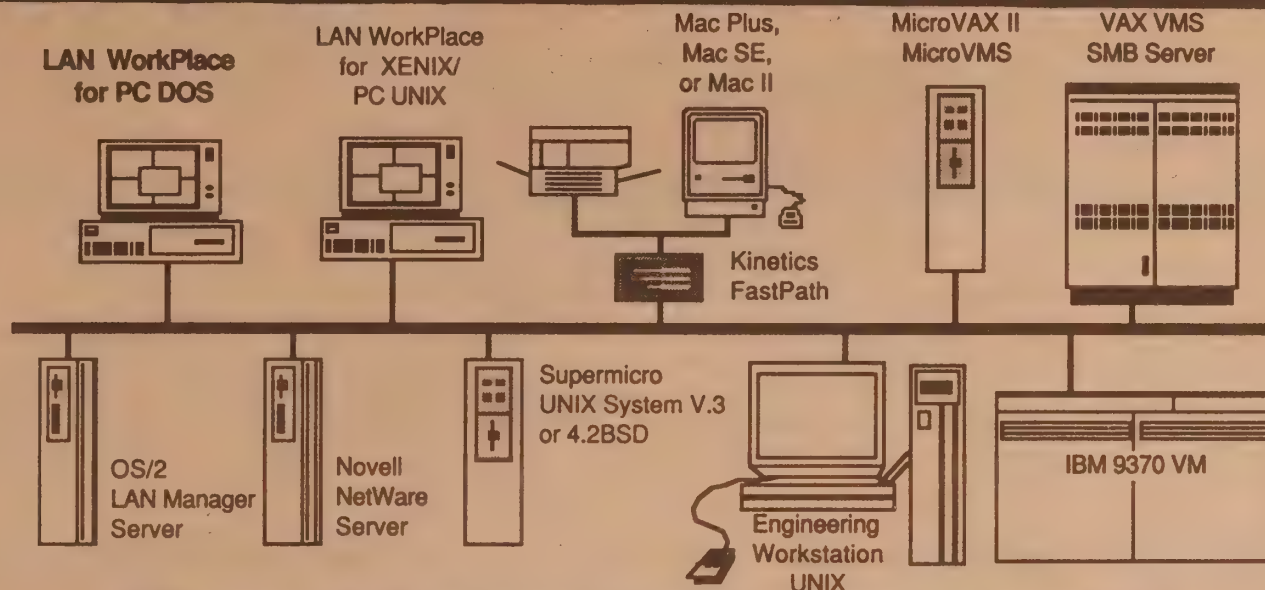
It seems just as reasonable that the growing number of real-time-application introductions will increasingly promote more small networks.

DayFlo Software Corp. has a network version of its *DayFlo TRACKER* personal information manager. It supports applications like client-contact management in its own database with a combination of structured and free-form text. Records in *TRACKER* that share a common field are linked by a common index. Additionally, a multiple-value-field feature can accommodate up to 101 different indexed values per record. For example, this lets a user have contacts with several telephone numbers, all of which would appear in the same expandable field. Full editing capabilities and mail merge are included.

However, the current edition doesn't allow real-time updating. The company is planning to come out with a new version accommodating the feature as soon as it can be developed. "We are getting a strong demand for a multiuser version," said director of engineering Steve Bernard. "People have been frustrated because they didn't have the ability to do a real-time update." So, they've been using clumsy work-arounds and agitating for changes.

The company is responding to those stated needs. Bernard continues, "I've got a real-estate developer who said 'I'll put in a network as soon as this is multiuser.' He doesn't need the network to move his files around—he does it with diskettes—

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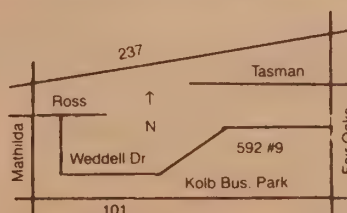
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but he said he'll put the network in when the product's got simultaneous-update capability. I think that the year of the LAN is finally starting to happen."

Small Networks Today

Besides the trend being experienced by the vendors themselves, there isn't much activity with office automation or group-productivity software yet. Dealers who sell smaller networks find that almost all of their sales are still made to users with specific application needs.

Vahe Aghabegians, president of Microcomp, sells one or two LANs each month. The Burbank, California-based computer reseller says that two years ago networks sometimes went unused. Customers were even asking him to uninstall them after disappointment with the available application software. "That's changed," he says of the current market, "but group-productivity software still needs more development for ease of maintenance by the network supervisor." Now there are more applications, but still "mostly for distributed processing of order entry, accounting, word processing, and spreadsheets."

Other small dealers tell the same story. Jeff Lasman is vice president at Management Accounting Systems, Inc. (MAS), a Los Angeles-based VAR (value-added reseller), which often writes applications in *DataFlex* for the 8-to-15-user LANS it sells. According to Lasman, MAS customers include the LA Raiders and *LA Weekly*, where he is currently installing a seven-user network that will automate order entry and production for classified advertising. Lasman is also a director of the Los Angeles Novell User's Group (LAN-U) and the editor of its newsletter. Says he, "Our users are very application specific."

The two or three LANs that the company sells each month are still not using group-productivity or office automation software although the company does support one groupware application: *Office Works* from Data Access. *Office Works* incorporates email, telephone messaging, calendar with individual and group scheduling, document control, and name-and-address data management.

The number of LAN installations continues to grow but, so far, not because of office automation or group productivity for the small office. Software Central in Glendale, California, has a new network division headed by Kén McCallick. McCallick's group sells directly—mostly 3Com or Banyan's Vines—to large

LAN customers with 30 to 1,000 nodes. They also sell smaller systems, including Novell, through resellers. Altogether, Software Central currently sells about five to six systems a month and its LAN business is growing rapidly.

Central is also planning to introduce preconfigured LAN packages that the customer can take out of the box, plug in, and run without configuration headaches. Once their proposed LAN-In-A-Can begins to ship, the company expects to sell five to six small, ready-to-run networks a week. Robert Lamishaw is the company's director of technical support and also the man in charge of developing LAN-In-A-Can. "Nobody knows what office automation is, what to do with it, or how much to spend on it," says Lamishaw of the current market. "It's often one of the justifications for installing a LAN but seldom one of the uses."

According to Software Central's training coordinator, Dave Milligan, over 90 percent of the systems the company sells are for accounting applications such as inventory, order

Even when it's possible to share data with sneaker net, it's impractical to do it on a real-time basis. And, certain types of information just aren't valuable unless they're absolutely fresh.

entry, medical-office management, or for legal offices (primarily word processing). Office automation is still not a big part of sales.

Larger distributors of computer products haven't seen much activity with groupware yet either. Dave Wagman, co-chairman of Softsel, the computer-products distributor, feels that "We're a long way from that [groupware] being a meaningful product category in terms of sales."

The Future

The comments of these LAN resellers and distributors might lead one to a somewhat pessimistic conclusion regarding groupware and office auto-

mation. However, promising new software is just being introduced and it takes time before new applications begin to be widely distributed and accepted. As more titles appear, the market will gain credibility and users will begin to ask for groupware—and the networks they need to use it.

Information Research is just about to begin shipping *SYZYGY*, one of those titles that might help to make a difference. *SYZYGY* provides real-time access to management data; the program combines functions for managing activities, resources, schedules, and budgets. Data can be entered into a structured database and then used for the management of multiple projects, people, schedules, and budgets in real time. Managers can set objectives, define projects and tasks, identify resources, assign responsibilities, and set due dates, milestones, keywords, budgets, and priorities.

Steve Lents, National Sales Manager, Technical Products Division, is the person responsible for selling LAN software for Ingram-Micro D—the world's largest distributor of computer products. Lents thinks that this category of software is about to have a substantial impact. "*SYZYGY* is going to be real hot. It's going to do some damage out there [presumably, to its competition in the market]. Managers will go out there and order networks just to have *SYZYGY*'s functions," he says.

Market Intelligence Research Company (MIRC) has predicted that departmental/workgroup multiuser computer systems will be a \$40 billion worldwide market by 1995. The research was reported in a new \$1495 study titled "Multiuser System Markets: Departmental/Workgroup Applications," which deals with systems that provide simultaneous access to a common set of data.

Although LANs are not included in the study, there is every reason to believe that LAN applications, which also provide multiple users with simultaneous access to common sets of data, will constitute a large market in coming years. That seems like a reasonable assumption if LANs continue to be an alternative for workgroup applications as they are today. And it seems just as reasonable that the growing number of real-time-application introductions will increasingly promote more small networks.

Software Central is clearly preparing to position itself for a forthcoming surge in small systems with its LAN-In-A-Can. Group-productivity and office-automation software may provide much of the impetus for this

growth. As Central's McCallick says, "If it's ever out there where you've got all the hardware packaged and the windows, menus, email, scheduling, word processing, and the other stuff that you need, somebody's going to make zillions." ■

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Resources:

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WordPerfect Corporation
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Brightwork Development, Inc.
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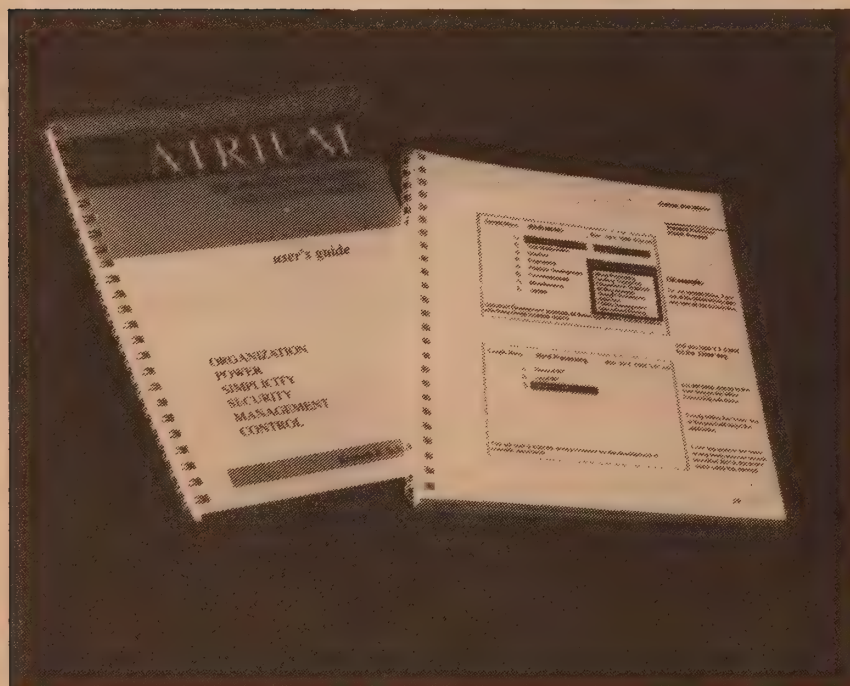
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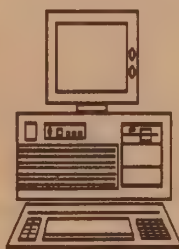
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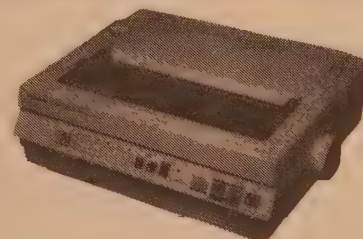
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24-Pin Dot Matrix Printer

Panasonic
Office Automation



KX-P1124

Announcing the Panasonic KX-P1124, a 24-pin printer with high performance features at a 9-pin printer price. The KX-P1124 features the EZ-Set operator panel that lets you control the most often changed printing features and lets you save and recall these settings for up to 3 different applications. Other notable features include a wide variety of paper handling capabilities such as a push/pull flat belt tractor and rear, bottom & front paper feed paths. All of these features come packaged in a rugged design with a *two year* limited parts and labor warranty.

• Letter Quality Fonts
Courier, Prestige,
Bold PS, Script,
Sans Serif

• Printing Sizes
5, 6, 7.5, 8.5, 10, 12,
15, 17 & 20
characters per inch

• Emulations
Epson LQ-2500,
IBM Proprinter x24

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Limited offer.

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HARDWARE

BUYERS GUIDE

EXP 80386/20 System

- Intel 80386-16 $\Sigma\Sigma$ CPU
- 20 MHz 0 wait clock speed (24 MHz Version also available)
- S/W speed change (20/12/8/6)
- 6MB Memory board and 1MB RAM included (Supports shadow RAM)
- Industry standard PHOENIX Bios
- (1) 32 bit slot (5) 16 bit slots and (2) 8 bit slots
- Utility disk
- Norton SI:22 Landmark speed: 25
- 80287 & 30387 co-processor socket
- 1.2 MB floppy drive standard
- Hard & Floppy disk controller standard
- 220W UL power supply
- Keytronics 101 enhanced keyboard standard
- 1 serial/1 parallel/Game port standard
- Real time clock standard
- Hercules compatible monochrome card standard
- 12" Amber TTL monitor standard
- 15 days money back guarantee for S/W compatibility

\$1,495

Options:

EGA board & monitor	\$385
20MB (ST225) Hard Disk	225
40MB (ST251) Hard Disk	360
80MB (ST4096) Hard Disk	675
24 MHz System	1795
Tower case	95

EXP 8088 System

- 512K memory - expandable to 1 MB
- 4.77/10 MHz clock speed.
- 360KB floppy drive.
- Phoenix Bios (ver. 2.52)
- Printer port, Serial port.
- Game port.
- Real time clock.
- Hercules compatible mono card.
- 12" Tilt & Swivel amber monitor.
- Keyboard.
- 165W power supply.
- Slide in type case.
- Keylock switch.
- Power on LED.
- Turbo mode LED.
- Hard disk drive LED.
- Hardware reset switch.
- No hidden cost, Ready to run.
- Optional NEC V20 (SI:4.0)
- 15 days money back guarantee for S/W compatibility

\$560

640KB memory	\$610
20MB hard disk	265
30MB hard disk	300
2nd 360KB floppy	75

EXP 80286 System

- 512K memory, expandable to 1MB
- 80286-10 cpu, Phoenix Bios (3.10)
- 6/10 MHz 0 wait. Norton SI:11.5
- Keyboard (84 Key)
- 1.2 MB Floppy Drive
- Printer Port
- Hard/Floppy Disk Controller
- Real Time Clock
- Hercules Compatible Mono Card
- 12" tilt & swivel monitor
- Keyboard
- Hardware Reset Switch
- Turbo Mode Switch & LED
- 230W Power Supply
- No Hidden Cost - Ready To Run!
- Optional Tower Case
- 15 days money back guarantee for S/W compatibility

\$825

12 MHz 0 WAIT System ONLY \$895

Options:

EGA board & monitor	\$385
20MB (ST225) Hard Disk	225
40MB (ST251) Hard Disk	360
80MB (ST4096) Hard Disk	675
640KB Memory Upgrade	70
Tower Case	95
VGA board & monitor	575

EXP 80286/20 System

- 1MB Memory installed
- Fastest 80286 system. Faster than IBM PS2 model 80
- 80286 CPU running 20MHz, 0 wait
- Latest PHOENIX Bios 3.10 (built-in setup)
- 80287 socket
- Express RAM slot expands memory to 8MB running at full processor speed
- Memory beyond 1MB configurable as extended or expanded (LIM 4.0)
- 1.2MB floppy drive
- Printer port
- Hard/floppy controller
- Real time clock
- Hercules compatible mono card
- 12" amber TTL monitor
- Keyboard (84 keys)
- Hardware reset switch
- 230W power supply
- Chips & Technology, NEAT chipset
- CPU board is made in USA
- Norton SI=23, Landmark=26
- No hidden costs - ready to run!
- Detailed technical manual available
- 15 days moneyback guarantee for S/W compatibility

\$1,295

Flat Screen 14" Amber TTL

- 14" Flat Screen Technology
- Non Glare, Dark Screen
- Built-in Tilt & Swivel Base

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Star NX 1000

- 144 CPS high draft speed
- 36 CPS NLQ printing
- 8 built-in NLQ fonts
- Proportional printing available
- Push button control panel
- Paper parking mechanism
- Tractor and friction feed
- IBM Proprinter/Epson emulation

Free Cable

\$189

PANASONIC 1091i

- 192 cps High Draft Speed
- 38 cps NLQ Printing
- Draft, NLQ (courier, bold PS)
- PC Magazine's Editors Choice
- Built-in Tractor Feed
- IBM & Epson Emulation
- 2 Years Warranty

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- New NEC Multisync Monitor
- 800 x 600 resolution
- IBM PC/XT/AT/386 & PS/2 compatible
- Unlimited palette of colors

Palette **\$535**

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JC 14" Amber TTL	89
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Nanao Flexscan	545
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IMTEC Multisync	450

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Multi I/O (FDC,S,P,G,C)	\$55
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Color graphic	45
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2400B Modem	99
8088 Hard disk cont.	59
8088 Hard disk RLL cont.	65
80286 Controller MFM/RLL	119/145
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Paradise VGA+/16	339
Paradise VGA +	285
Paradise VGA Pro	450
Everex EMS multifunction	65

PRINTERS

Panasonic 1124	369
Qume Scrip Ten Laser (Postscript 3MB Memory, 10ppm)	3,495
Panasonic 1091i	199
NEC P2200 24 pin	349
Epson LX-800	209
Star NX-1000	189

1:1 Interleave Controller

- DTC 7180: PC/AT, 1:1, MFM
- DTC 7187: PC/AT, 1:1, RLL
- DTC 7280: PC/AT, 1:1, MFM w/ FDC
- DTC 7287: PC/AT, 1:1, RLL w/ FDC
- DTC 6180: PC/AT, 1:1, ESDI
- DTC 6280: PC/AT, 1:1, ESDI w/ FDC

360K/1.2M/720K/1.4M Floppy Controller

- Handles any combination of 360KB/1.2MB/720KB/1.4MB floppy drive on 8088
- Easy to install
- Works on your 80286/80386 system.

Installation available

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- Game port

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Fujitsu 360K/1.2MB	\$69/89
3.5" 720KB/1.4MB	79/99
ST225/238 hard disk	225/239
ST251/ST251-1 hard disk	355/435
ST4096 hard disk	675
ST125/138 (3.5", 38ms)	255/355
Micropolis 70MB	565

CPU BOARDS

8088 cpu bd (4.77/8MHz)	\$75
8088 cpu bd (4.77/10MHz)	79
80286 cpu bd (6/10MHz)	210
80286 cpu bd (6/12MHz)	250
80286 cpu bd (8/20MHz)	495
80386 cpu bd (6/8/16/20 MHz)	999
(1MB memory - cpu)	
Micronics 80386 cpu	1495
(1MB memory, cpu, 32KB cache)	

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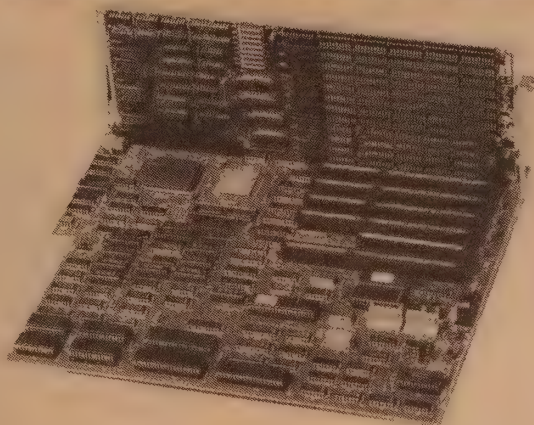


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HARDWARE

BUYERS GUIDE

Convert your PC/AT to 80386/20



FEATURES

- 20 MHz ϕ wait state
- Intel 80386-16 CPU
- Phoenix or Award Bios
- 6MB Memory & 1MB RMA included
- Supports shadow RAM
- Utilities Disk
- Made in USA
- Expand memory 1MB at a time
- Memory upgrade to 16MB available
- Supports 80387 or 80287
- S/W speed change (20/12/8/6)
- (1) 32 bit slot (5) 16 bit slots and (2) 8 bit slots.
- DOS, OS/2, UNIX & Novell compatible.

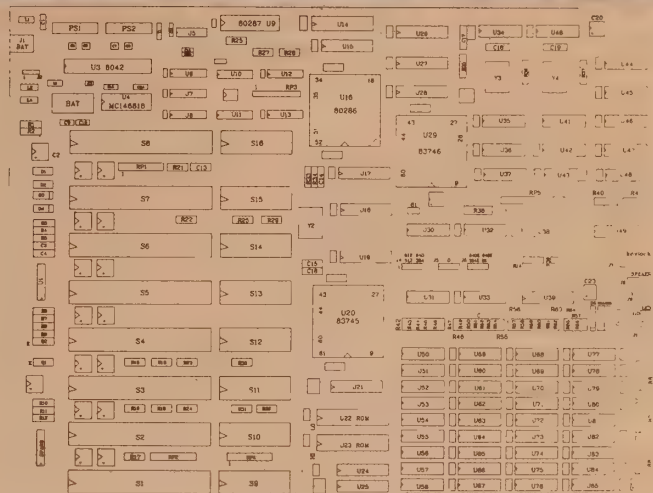
You may use your case, power supply, keyboard, floppy drive, hard disk drive and all of your add on cards.

Please call us for more information.

\$999.

* Free Installation

Convert your PC/XT to 80286/10.



FEATURES

- 6/12 MHz, 1 wait state
- Intel 80286-10 cpu
- Award Bios (built in setup)
- Same size as IBM PC/XT
- Can use PC/XT Controller or AT (16 bit) Controller.
- (2) 8 bit slots (6) bit slots
- Support 80287
- 1MB memory expandable
- DOS, OS/2, UNIX & Novell compatible

You may use your old 150NS DRAM (41256 only), case, power supply, keyboard, floppy drive, hard disk drive and all of your add on cards. Even you can upgrade with 16 bit add on cards too (Most other conversion board has only 8 bit slots)

\$250.

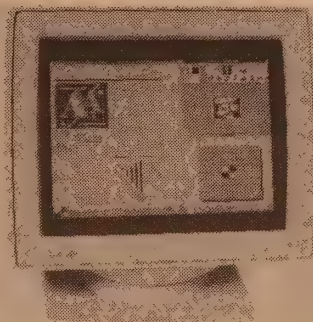
* Free Installation

1024x768 Display System

VENTURA

AUTOCAD

PAGEMAKER



WINDOW

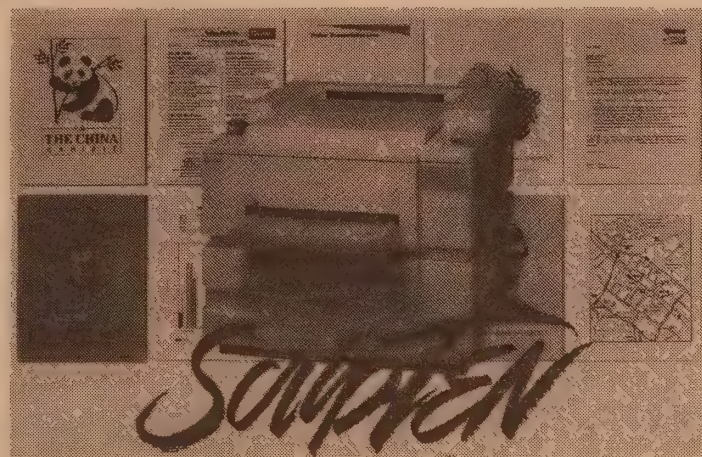
GEM

BENEFIT	FEATURE
Compatibility	IBM PC/XT/AT, PS/2 30
Widest Scanning	29KHz horizontal scan
Horizontal lines	Interlaced
Vertical lines	1248
Superior display Resolution	798
Ergonomically designed for ease and comfort	1024 x 768
CRT	Built-in tilt and swivel base,
Display size	15" Diagonal, 90 degree, flat screen
Power Source	230mm x 170mm
Power consumption	AC 115/60Hz
Real controls	35 watts
Color	Power, Brightness, Contrast
Nonlinearity	V-size, V-Line, V-HDD
Input connector	Paper white phosphor,
Operating environment	Non-glare etched screen
Physical dimension	10% maximum
Testing	9-pin, D-type
Warranty	Temperature -5°C -40°C
	Humidity 5 -80%
	13" x 13" x 12"
	72 hrs. burn-in
	One year, parts and labor

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* With 15" monitor & card

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ScriptTEN™

High performance and immediate delivery. Qume has it right now. It's the ScriptTEN with genuine Adobe PostScript® — a rugged value-packed laser printer that's 25% faster and comes with 50% more memory than the Apple® LaserWriter® IIx.

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8088 Mono System



- 640K Ram
- 5.5/8MHz
- MS DOS 3.2
- 360K Floppy Drive
- MDA/CGA Adaptor
- Clock/Calendar
- 4 Expansion Slots
- Mono Monitor

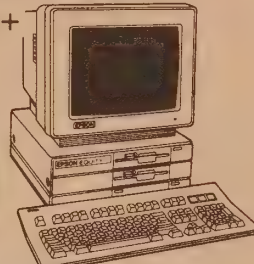
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With 20MB HDD & Color Monitor...\$1125

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**FREE
1200BD
MODEM!**

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- 5 Full Size Expansion Slots
- Clock/Calendar w/ Battery Backup
- 640K RAM
- Parallel & Serial Ports
- 360K Floppy Drive
- MS DOS & GW BASIC
- Enhanced Keyboard

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With 20MB HDD & Mono Monitor...\$1147

ACCESS

286, 12MHz, 0 WAIT



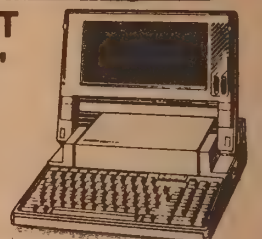
- 512K Memory...Expandable to 4MB
- FDD/HDD Controller
- Teac 1.2 MB
Floppy Drive
- AT-Style Keyboard

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With 20MB HDD & EGA Monitor...\$1599

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**"EQUITY LT
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With Supertwist Screen, 2 FDD's, LAPLINK PLUS,
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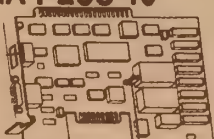
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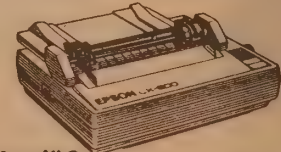
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* Indicates after Factory Rebate

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Provides Immediate Connectivity
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LX800...Quality on a Budget



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- Easy Typestyle Selection
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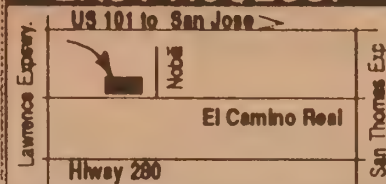
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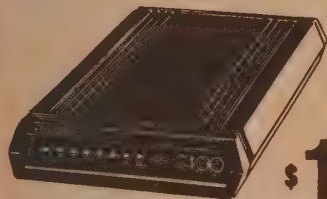
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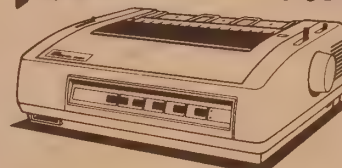
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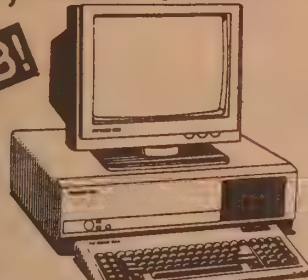
- Very Black Letter Quality Printing!
- Up to 265cps; 90cps LQ
- Up to 360 x 360 Res.
- Color Option Available
- Seven Resident Typestyles

P5300.....\$669

ACCESS

286,10MHz 0 WAIT

20MB!

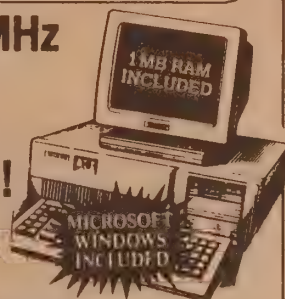


- 512K Memory... Expandable to 1MB
- 20MB HDD
- Mono Monitor & Card
- Parallel Printer Port
- TEAC 1.2 MB Floppy Drive
- AT-Style Keyboard

\$999

Tandon

286,10MHz
"PCA-1
PLUS"
..SOLID!



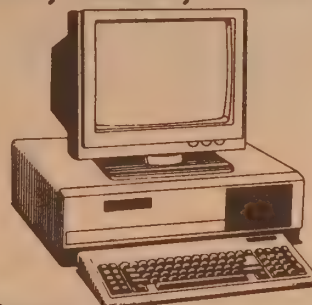
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- 6 Available Expansion Slots
- Hard Disk Controller
- DOS 3.2 OS/2 Ready
- 1 Parallel, 1 Serial Port
- Enhanced Keyboard
- 1.2MB Floppy Drive

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286,12MHz, 0 WAIT



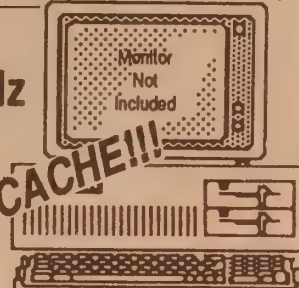
- 1MB Memory
- FDD/HDD Controller
- 1.2 MB Floppy Drive
- 101 Keyboard
- DOS 3.3 w/ GW Basic

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With 30MB HDD & Mono Monitor..\$1688

MYLEX

386
20MHz



64K CACHE!!!

- MYLEX 20Mhz Motherboard
- 1MB RAM... expandable to 8MB!
- 64K Cache Memory
- I/O Parallel & Serial Ports
- Supports 3.5" Drives ..up to 1.44MB
- Enhanced Keyboard

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With 66MB HARD DISK\$2498

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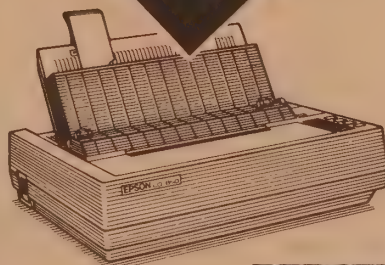


- 24 Pin for True Letter Quality
- 180 cps; 60cps LQ
- 360 x 360 dpi
- Paper Park • Push Tractor
- Optional Multi-font Cartridge Available

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Less ACCESS Discount -180
Less EPSON Rebate -25

Your Net Price \$324

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REBATE

LQ850	80 Column	\$50
LQ950	110 Column	\$75
LQ1050	136 Column..	\$100

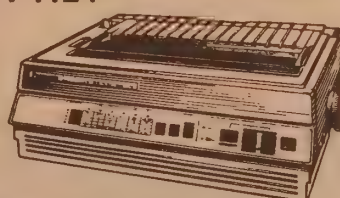
All Three Models Have:

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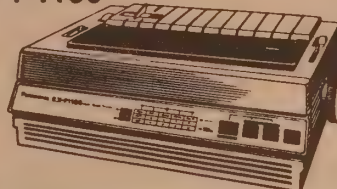
KX-P1124



- "EZ-Set" Front Panel
- 24-Pin for True Letter Quality
- 192cps;63cps LQ
- Rear, bottom, & front feed
- 360x360 dpi

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KX-P1180



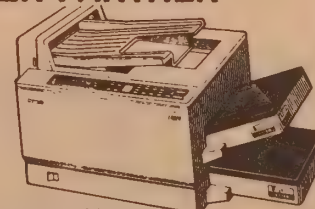
- "EZ" Front Panel Controls 11 Functions!
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1191	240cps48cpsNLQ,80col	239
1595	288cps,61cpsNLQ,136col	449
1524	240cps,80cpsLQ,24-pin	499

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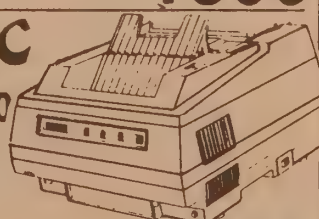
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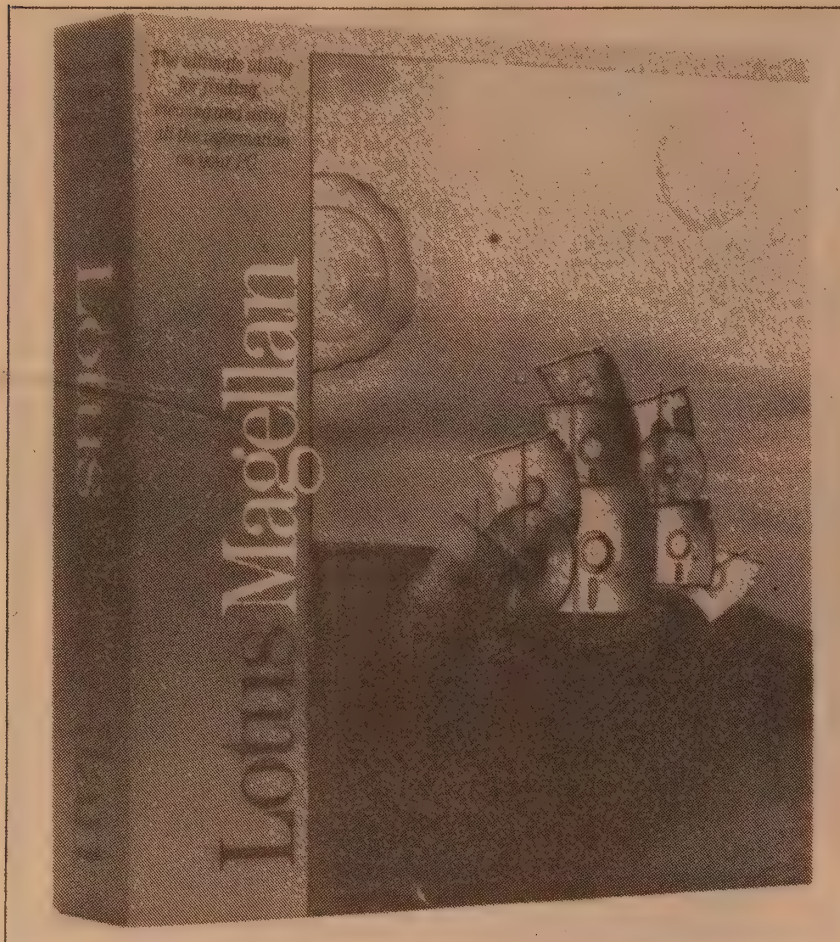
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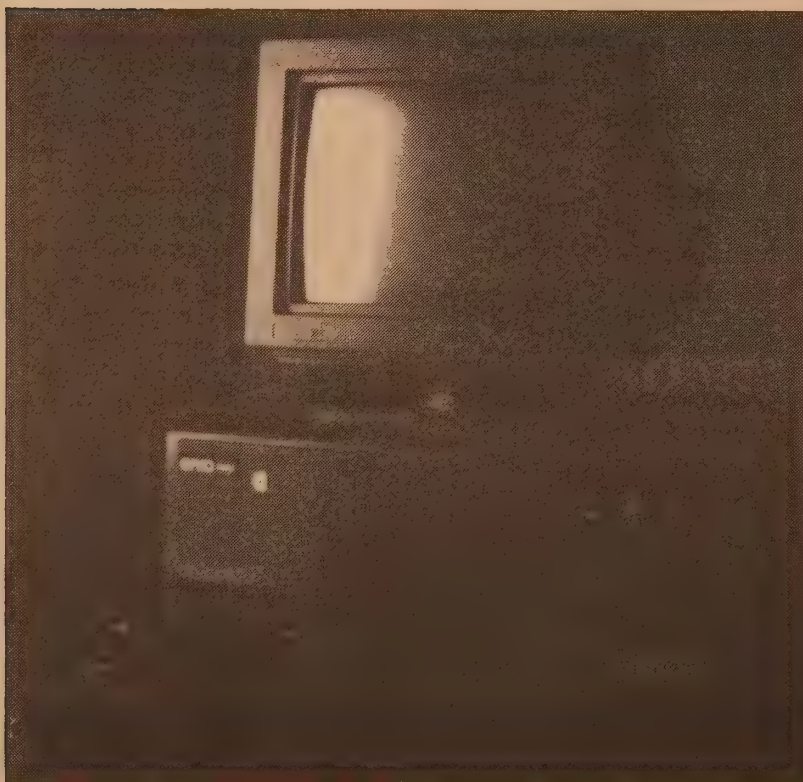
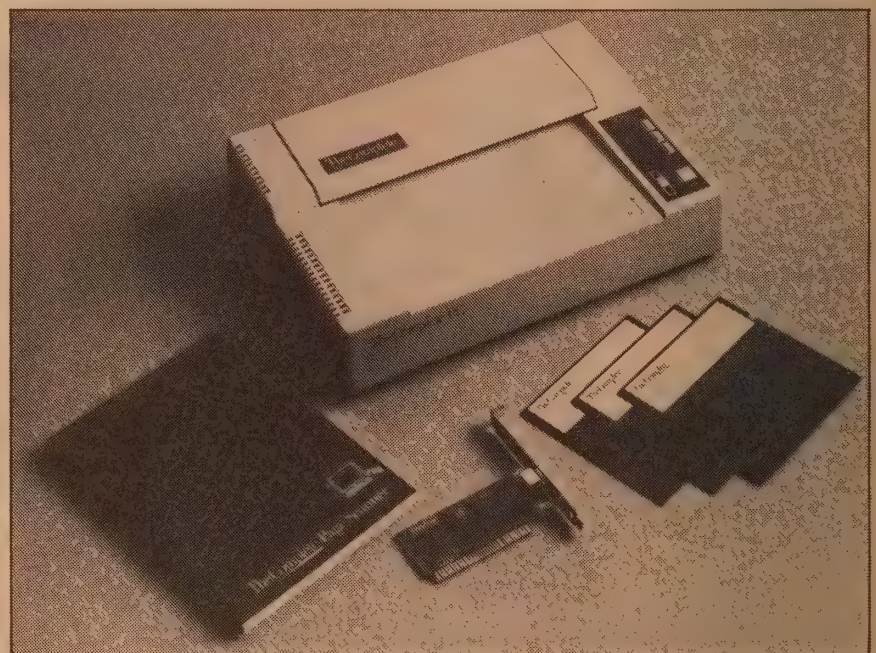


Lotus Utility Opens And Views Files

Lotus Development has started shipping *Lotus Magellan*, a new utility that finds, views, and uses information on a hard disk. With a single, consistent viewing environment, *Magellan* allows users to locate information stored anywhere on a hard disk by specifying concepts, phrases, or precise words. The user can instantly read, in native file format, the contents of all files created in most common application programs. Once the desired information is located, *Magellan* can launch directly into the application and automatically retrieve the file for editing. *Magellan* also provides means for manipulating information such as gathering portions of files from different applications into a single file. Besides allowing users to launch directly into any application on their PCs, *Magellan* reads all ASCII files stored on a hard disk and formatted files from the leading software packages. Initial applications supported by file format readers in *Magellan's* viewing mode are: *Lotus 1-2-3*, *Lotus Symphony*, *Lotus Agenda*, *WordPerfect*, *IBM DisplayWrite*, *dBASE*, *Microsoft Word*, *WordStar*, and *MultiMate*. *Magellan* is available immediately for \$139 through June 30. Beginning July 1, the retail price will be \$195. Lotus Development Corporation, 55 Cambridge Parkway, Cambridge, MA 02142. (617)577-8500.

Complete PC Ships Low-cost Scanner

The Complete PC, Inc. has started shipping its new, low-cost scanner, The Complete Page Scanner. Page Scanner sells for \$899 retail and comes with an interface card and SmartScan software. The user can crop, erase, rotate, scale, pixel edit, and convert scanned images to many different graphic formats including PCX, .MSP, .CUT, TIFF, .IMG, and facsimile. When used with The Complete Fax card, \$399, the user can have a full-featured PC-based fax solution for less than the cost of most fax machines. *The Complete OCR/Page* is an optional software application giving The Complete Page Scanner full OCR capabilities. It sells for \$495. The Complete PC, Inc., 521 Cottonwood Drive, Milpitas, CA 95035. (408)434-0145.



GRiD Introduces 386 Desktop

GRiD Systems has introduced the GRiD-DESK 386isx, a desktop computer featuring 80386 performance at a price comparable to 80286-based desktops. The GRiD-DESK is based on the Intel 80386sx microprocessor running at 16 MHz. It is available in Models 1, 40, and 80. A 1.44 Mb, 3.5" floppy drive is standard on the Model 1; a 40 Mb SCSI hard drive is standard on the Model 40; and an 80 Mb hard drive comes with the Model 80. Standard configuration of all models includes 1 Mb RAM expandable to 16 Mb, VGA graphics, five AT-compatible expansion slots, two dedicated memory slots, bi-directional parallel and RS232 serial ports, and a 200-watt power supply. The systems also support industry-standard AT Integrated Drive Electronics (IDE) SmartDrive storage technology devices. IDE frees up one card slot normally used by a hard drive controller card by integrating the controller on the motherboard. Options include a 16 MHz 80387sx math co-processor and 170 Mb and 344 Mb hard drives. Optional monitors include a 14" VGA monochrome monitor and a 12" VGA color monitor. (\$2,795, \$3,995, \$4,495) GRiD Systems Corporation, 47211 Lakeview Blvd., Fremont, CA 94538. (415)656-4700.

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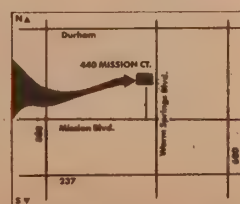
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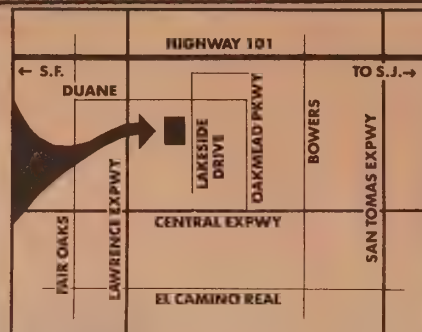
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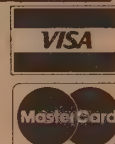
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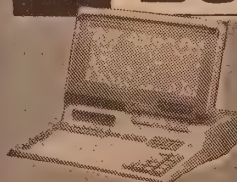
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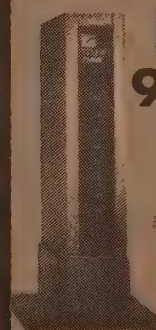
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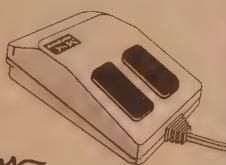
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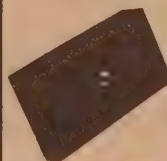


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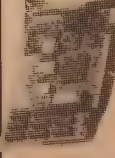
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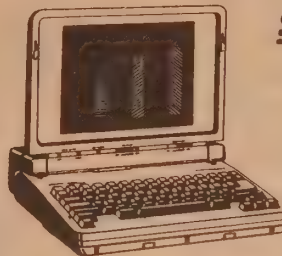


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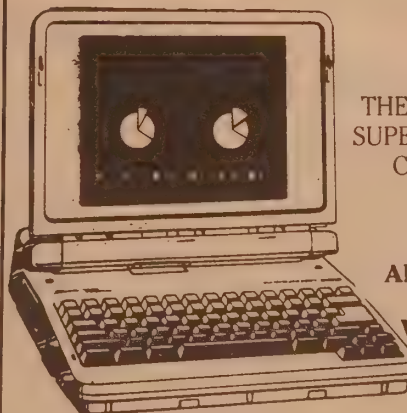
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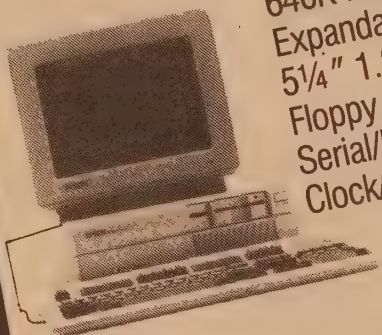
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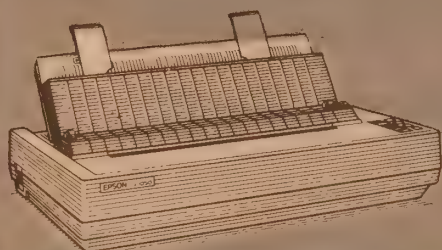


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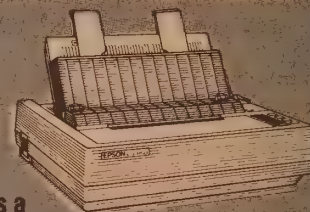
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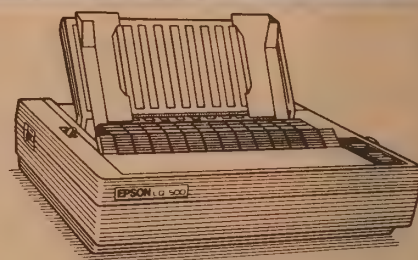
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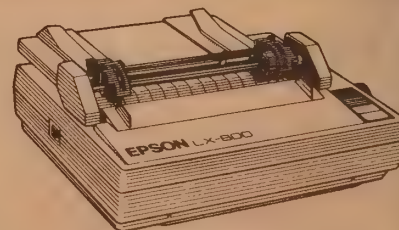


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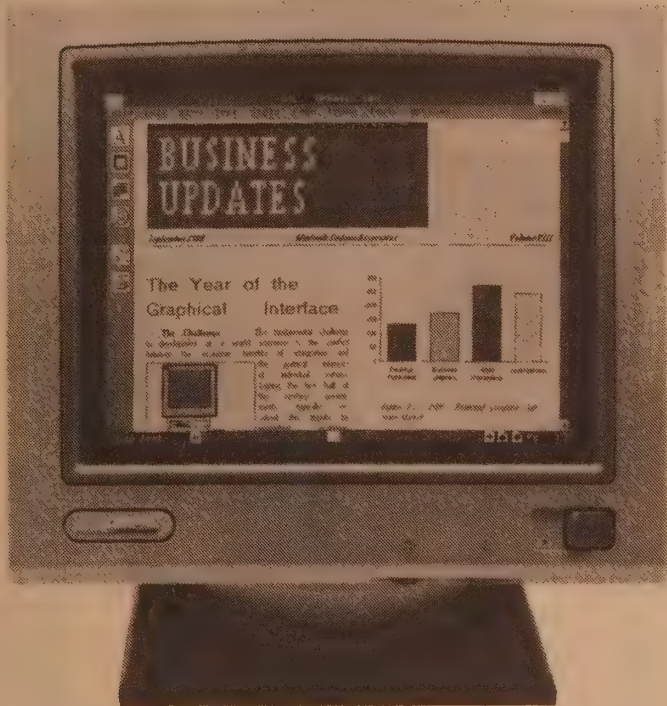
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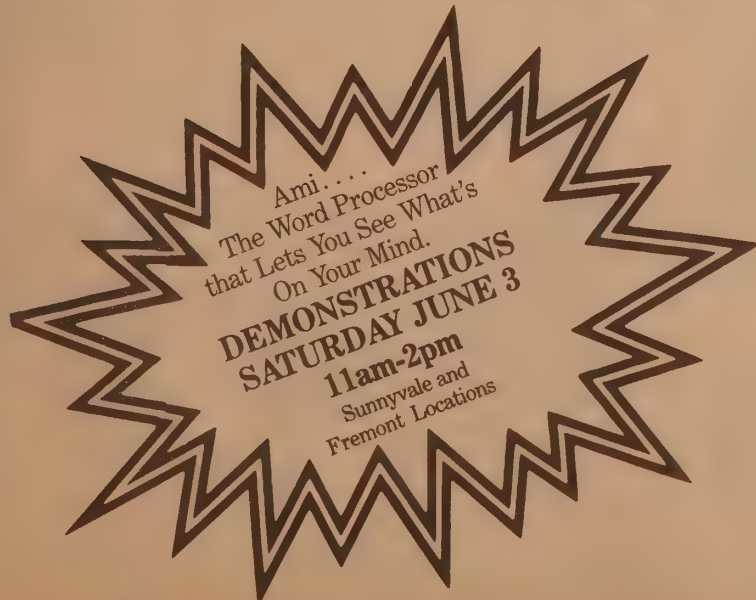
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All of us want beautiful, professional-looking results from our word processing. But who has time for the processing?

Who has time to manipulate columns and margins, align paragraphs, justify lines, tinker with leading, insert graphics and wrap text?

Let's face it. Writing is hard enough without having to struggle with formatting when you're finished.

Well, now you don't have to.

Because now there's a word processor that lets you create

your words and your page layouts *at the same time*—as one intuitive train of thought.

While making the entire process easier, friendlier and more accessible than you ever dreamed possible.

Also a whole lot faster.

In fact, Ami™ is designed to save you about three quarters of the time—and effort—you're currently spending on everything from simple letters and memos to presentations, reports and multi-column newsletters.

For people who do Windows. And people who don't.

With its WYSIWYG screen display, powerful use of frames and interactive dialog boxes, Ami looks a lot like a desktop publisher.

But it's actually a serious word processor that makes the most of the Microsoft® Windows environment.

(If you don't have Windows, don't worry. A runtime version is included with Ami.)

Ami gives you everything you need to process words quickly. Like complete and efficient keyboard commands (or mouse, if you insist). A 130,000-word spelling

checker. Search and replace. Cut, copy and paste. Headers and footers. Undo functions. Context sensitive help. And much more.

Ami even gives you a choice of ways to write.

In Draft Mode, you can put your head down, get your words into the computer as fast as humanly possible and worry about formatting later.

Layout Mode, on the other hand, gives you instant onscreen formatting, with automatic spacing, fonts, special effects and all the other things we mentioned at the top of this ad.

If you'd rather not do any designing, you don't have to. Because Ami comes complete with 25 pre-designed style sheets.

You can use them right out of the box. Modify them. Or create your own.

You can integrate text and graphics. Import both from

other programs. And admire your documents from four fully editable page views.

There's no time like the present.

Ami is the next generation in word processing. Yet it sells at a price that would make your grandparents nostalgic.



But hurry. Time's wasting.



Ami comes complete with 25 pre-designed style sheets, so writing and formatting time is reduced to practically nothing.

SAMNA

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PRESENTS

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If you're one of the creative people, there is now a computer that can not only process words & numbers, but also create almost anything you can conceive.

COMMODORE® AMIGA®

2000HD



Powered by the Motorola 68000 microprocessor and proprietary graphics, animation and sound chips, the Commodore Amiga 2000HD is more than a match for the toughest professional computing assignment.

It features state-of-the-art color graphics, advanced audio/video capabilities, expandable data storage and an incredibly easy to use, multi-tasking operating system. It can produce computer graphics in 4096 colors, create 3-D animation and handle most any business task from word processing to spreadsheets.

Thanks to the expanded storage capacity of its 40MB hard disk drive, the Amiga 2000HD offers the speed, power and versatility necessary for professional applications such as video tilting, black and white and color desktop publishing, presentation graphics, 3-D solid modeling and music composition.

And by adding graphic complements like the New Tek digitizing system, black and white camera, DigiView color digitizing system, Deluxe Paint Software, APro Draw drawing tablet and the HP Paint Jet printer... all you have to add is your imagination!

7.16 MHz/16/32 Bit 68000 • 1MB RAM Expandable to 9MB • 256K ROM • Keyboard • Mouse

Serial/Parallel/RGB Ports • Up to 4 Expansion Slots Available

Built-In 3.5" Floppy Disk • 4 Voice 2 Channel Sound Output

Amiga Basic/Utilities • Clock/Calendar with Battery Backup

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Which is why your logical choice is the Amiga 2000.

The Amiga 2000 is a serious business computer. It has a powerful 1 megabyte memory (expandable to 9 Mb.), full color and graphics capabilities—and the business software to use it. In fact, there's even an Amiga compatible version of WordPerfect™ available.

HI-RES COLOR SYSTEM

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Lights, Action, Amiga 500.

The Commodore® Amiga® 500 isn't just a state-of-the-art home computer. It's a complete home video production studio. Create 3-D titles. Pro-quality animation. Super-impose amazing Amiga graphics with 4096 colors over any video image. Bring home a little Hollywood.

- Complete video production studio
- Powerful multi-tasking home office
- High-resolution graphics in up to 4096 colors
- 512K Megabyte standard, internally expandable to 1 megabyte

7.16 MHz 68000 CPU • 256K ROM 512K expandable to 1 MB Built-In 3.5" 880K Floppy Drive Serial/Parallel/RGB Ports Right & Left Audio Sound Channels Amiga BASIC Multitasking System 2-Button Optomechanical Mouse

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COMMODORE AMIGA™ 500

HI-RES COLOR SYSTEM



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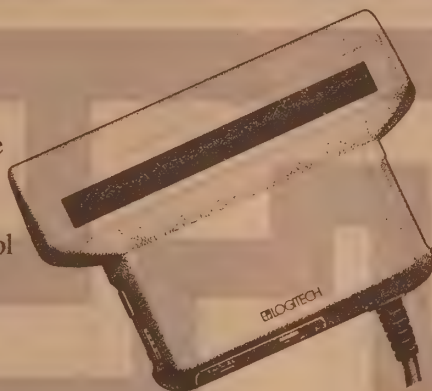
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Now you can turn your imagination loose with ScanMan, Logitech's affordable hand-held image scanner.

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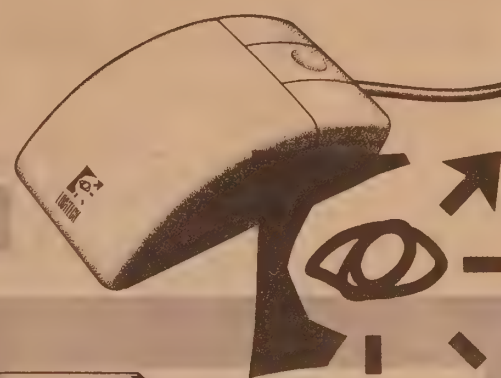
Create attention-getting fliers, catalogs and newsletters economically and easily — a complete desktop publishing solution which includes the Logitech Serial or Bus Mouse, Plus package Software and Publisher desktop publishing software

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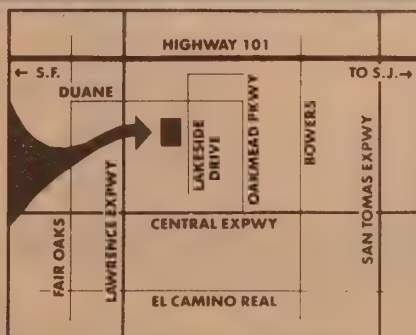
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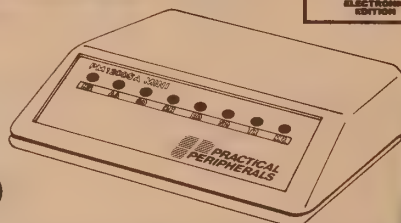
Our surface mount technology is setting new standards of excellence . . . and value. Not only is the Practical Modem Hayes Compatible, we think it's the most user-friendly modem around. It's all here. Price, Performance and a Quality Guarantee for a Full 5 Years!

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Stand-Alone Modem
100% Hayes Compatible

5"x4"x1.1"

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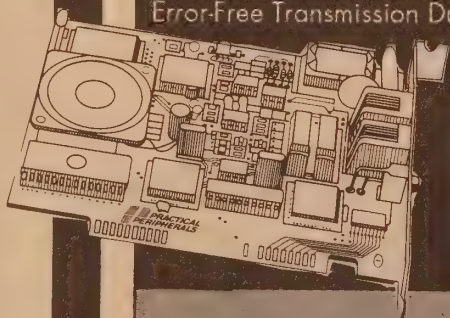
PM 1200SA Mini



2400 BAUD INTERNAL MODEM

100% Hayes Compatible • Pro Com Software

Error-Free Transmission Due To Auto-Adaptive Equalization



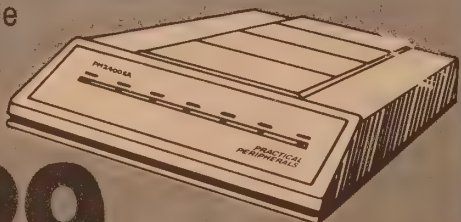
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2400 BAUD MNP EXTERNAL MODEM

Hayes Compatible

PM2400SA
MNP LEVEL 5

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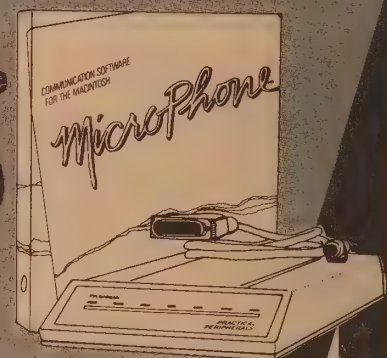
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MAC-NIFICENT MAC-Compatible With Microphone
Advanced Mac Communications Software

FREE! Modem Cable
100% Hayes Compatible

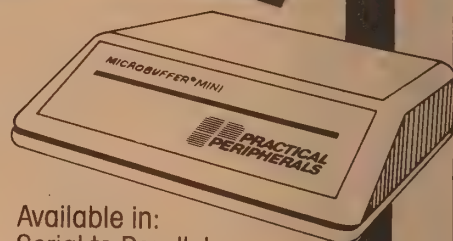
\$229



MICROBUFFER MINI

128K Expandable to 512K RAM
Compact Stand-Alone
Printer Buffer

\$129



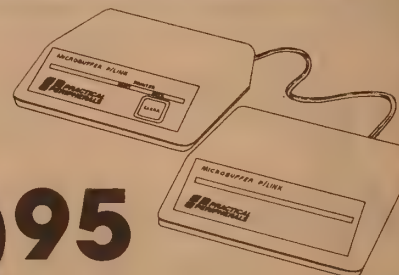
Available in:
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32K to 512K Parallel to Parallel^{69⁹⁵}

MICROBUFFER P/LINK

Put Your Printer Up To
7000 FEET Away From
Your Computer. Use The
Buffer w/32K Up To 512K
Includes Transmitter & Receiver

\$119⁹⁵

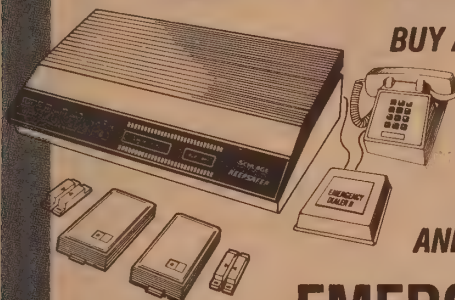


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Schlage® "DIALER For NO DOLLARS"

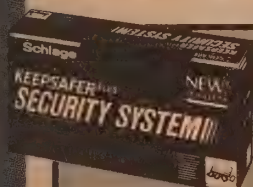
You're A Winner at Fry's!



BUY A **Schlage®**
KEEPSAFER
SECURITY SYSTEM

AND GET A **FREE \$99**
EMERGENCY DIALER

Affordable and easy to install with only a screwdriver, the Schlage Keepsafer is America's best-selling do-it-yourself home security system. And when you buy a Keepsafer (model 71-102) or Keepsafer Plus (model 71-105), you can get a FREE Emergency Dialer (a \$99 Value!) from Schlage. With the Emergency Dialer and the Schlage Keepsafer, your home can be monitored 24-hours-a-day, 365 days-a-year, whether you're home or away. A \$99 Schlage Emergency Dialer FREE with the purchase of either a Keepsafer or Keepsafer Plus — it's just one more example of home security made affordable at Fry's Electronics.



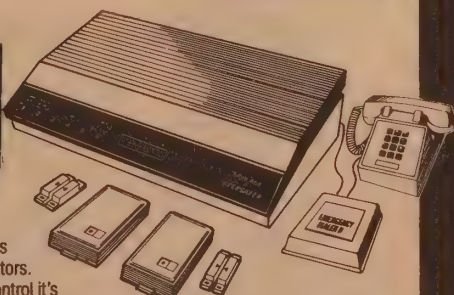
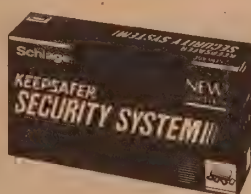
**Inexpensive Security System
Protects You Against
Uninvited Guests**

And overpriced competitors. For a lot less money the Schlage Keepsafer has virtually every feature available in most professionally installed systems; the Emergency Phone Dialer even monitors your home while you're away. And it's wireless, so you can avoid expensive installation by doing it yourself with nothing more than a screwdriver. The affordable Schlage Keepsafer. You couldn't find a security system like this if your life depended on it.

\$149

KEEPSAFER PLUS™
SECURITY SYSTEM

**SECURITY
AT YOUR
FINGERTIPS!**



The Schlage Keepsafer Plus Security System protects you against uninvited guests and overpriced competitors. And with the remote control you can conveniently control it's safety features anywhere within range of the console.

The Keepsafer Plus. Virtually all the features and security of a professionally installed system at a fraction of the cost. And all at your fingertips.

\$299

Schlage®.KEEPSAFER.
COMPACT
HOME & APARTMENT SECURITY SYSTEM

The Schlage Keepsafer Compact is perfect for apartments and smaller homes and uses the same wireless technology as the regular Keepsafer. It's console takes up little space and its remote control fits into any pocket or purse. The Keepsafer Compact. Powerful protection in a convenient compact system.



\$89⁹⁵

**DESIGN YOUR OWN CUSTOM SECURITY
SYSTEM WITH A SCHLAGE KEEPSAFER AND
THE COMPLETE LINE OF SCHLAGE ACCESSORIES**

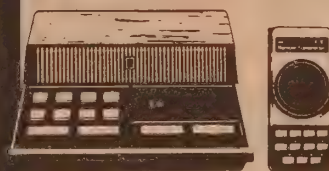
*Free emergency Dialer to be sent to customer by Schlage with proof of Keepsafer or Keepsafer Plus purchase. Details available at Fry's Electronics.

X-10® POWERHOUSE™

**THE ULTIMATE
HOME CONTROL SYSTEM**

Now you can use the power of your computer to control all the lights and appliances in your home! All without tying up your computer. In the "Install" mode, you select a room in which to install graphical icons which represent what you want to control. Then in the "Operate Mode" you select a room in which the light or appliance you wish to control is located.

You use the joystick to point to the Icon representing the light or appliance you wish to control. Then point and click to select whether you want to turn it on or off, Today, Tomorrow, Everyday or on Specific Days and then set the time you want it to go on or off.



TELEPHONE RESPONDER

Controls your lights and applications from any telephone, wherever you are!

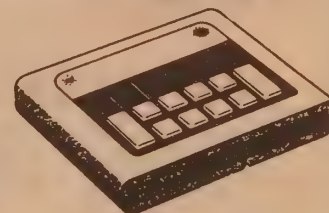
Transmit control signals with your 3 digit security code to control up to 8 lights & appliances

\$39⁹⁵

MINI CONTROLLER

Instantly controls 8 lights & appliances throughout the house with the push of a button—From one convenient location

\$9⁹⁵



**APPLIANCE
MODULE**

Receives signals from the timer or mini-controller to turn on or off a TV, air conditioner, stereo and other appliances anywhere in the house.



\$14⁹⁵

LAMP MODULE

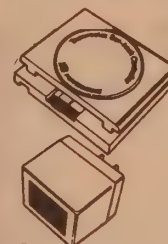
Receives signals from the timer or mini-controller to turn lamps on and off anywhere in the house. Full range dimming is possible from X-10 manual controllers.



\$14⁹⁵

**THERMOSTAT
SETBACK
CONTROLLER**

Mounts on the wall under your existing thermostat & plugs into the appliance module. Works with any thermostat so you can automatically set back heating or air conditioning using the timer, or remotely turn up heat/a/c before you get home using the telephone responder



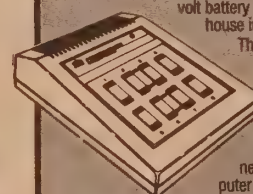
\$29⁹⁵

**COMPUTER
INTERFACE**

The Home Control Interface is a very sophisticated timer which is programmed from your computer and then disconnected. Simply plug lamps and appliances into the modules. Program different events for different days. You can even program your lights to dim at a predetermined time.

If you don't have a computer at home, you can program the interface at work, pop in a nine volt battery and bring the Powerhouse into your home!

The interface, available for IBM, Mac, Apple and Commodore comes complete with software and connecting cable. After programming, it can be disconnected, to free up the computer for everyday uses.



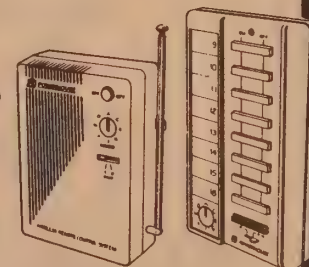
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WALL SWITCH MODULE

Replaces your existing indoor wall switch to control important indoor or outdoor lights; hallway, porch, flood lights, etc.

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The
**Ultimate
Remote
Control**



Imagine being able to turn on the lights in your house from your car as you enter your driveway. You'll never have to enter a dark house again. You can keep a Transmitter by the bedside to turn on all the lights if you hear a suspicious noise at night. You can mount a Transmitter on a wall and have one in every room to control any light or appliance from any room in your house.

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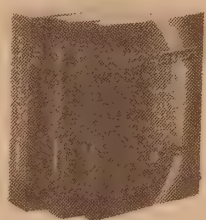
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1 MEG-100	80 N.S. \$19 ⁹⁹	\$16⁹⁹
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256Kx9-80	\$99	256X8-100 \$89

1989 IC MASTER



3
VOLUME S

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intel MATH COPROCESSOR

PC/XT 8087	5/6 MHZ	AT 80287
\$95		\$156
\$139	8 MHZ	\$217
\$188	10 MHZ	\$259

5 YEAR WARRANTY/BOXED/MANUAL

80387	80C287A	80387SX
16 MHz	CMOS Version 287 Uses 1/3 Power, Works In Laptops, Runs 12.5 MHz	PLCC For 286SX Based Computers, 16 Bit Version of 32 Bit 386
\$385		
20 MHz	\$359	\$399
\$465		
25 MHz		
\$585		

256K-150

120 N.S. \$5⁹⁹	100 N.S. \$6⁷⁹	80 N.S. \$7⁹⁹	\$5⁷⁹
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1 MEG X 9-120 \$199

100 N.S. **\$209** 80 N.S. **\$219**

**LOW PROFILE
2 MEGABYTE
SIMM MODULE**
MICRON 1 MEG X 8-120
Boxed/Manual
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MAC II

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2764A-250

200 N.S.
\$319 **\$299**

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64 x 4-150

120
\$9⁹⁹
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\$10⁹⁹

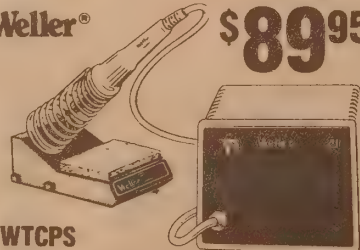
**1 MEG X 8
100 or 120 N.S.
\$179**

4164-150

120
\$249 **\$219**

100
\$269

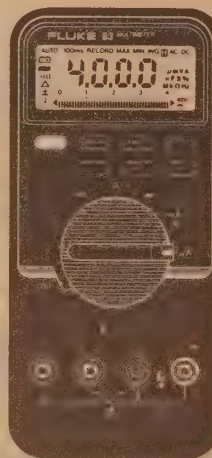
Weller® \$89⁹⁵



WTCPS

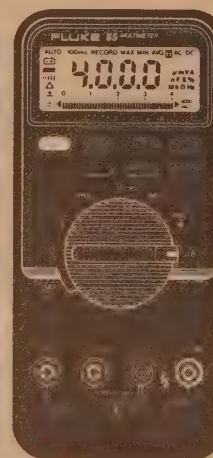
- Compact, remote operator comfort and convenience
- Self feeding water reservoir
- Exclusive closed water reservoir
- Pencil stand connects to right or left of station
- Storage for 6 temperatures sensing tips

The New 80 Series is a digital meter, an analog meter, a frequency counter, a recorder, a capacitance tester, and a lot more.



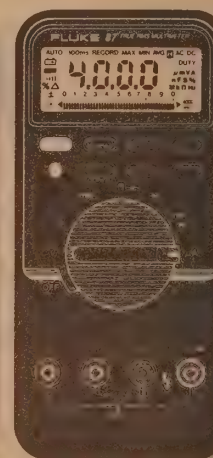
FLUKE 83

0.3% basic dc accuracy
5 kHz acV
Analog bargraph & zoom
Three year warranty



FLUKE 85

0.1% basic dc accuracy
20 kHz acV
Analog bargraph & zoom
Three year warranty



FLUKE 87

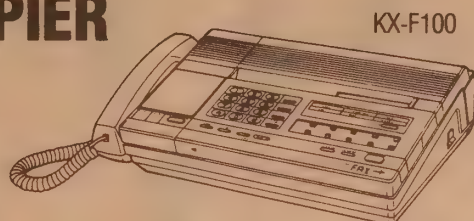
0.1% basic dc accuracy
20 kHz acV
High resolution
Analog pointer
True mms ac
1 ms PEAK MIN MAX
4 1/2 digit mode
Back lit display
Three year warranty

**VOLTS, OHMS, DIODE TEST,
AUDIBLE CONTINUITY, FREQUENCY, AND DUTY CYCLE CAPACITANCE,
TOUCH HOLD, RELATIVE PROTECTIVE, HOLSTER W/FLEX STAND**

FLUKE

Panasonic

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KX-F100

This compact, space saving design incorporates everything you need to run a business from your desk. A Full Function telephone for calling in or out or record messages on the answering machine when you are out of the office. Also, the convenient copier allows you to copy 8 1/2 x 11 inch documents. But the best part of all is the Fully Functional Facsimile for sending or receiving important documents

\$997

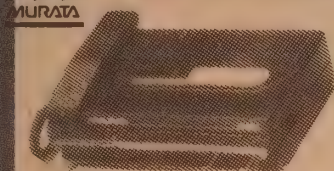
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FAX PHONE & COPIER

LED Display
Auto/Manual
Reception
Print Activity
Journal

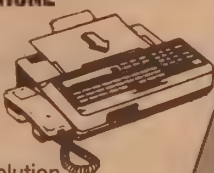
Model 1200

\$599

PANAFAX

UF-155
PANAFAX 155 FAX PHONE
& COPIER

- Built-In clock
- One-Touch & Abbreviated Dialing Memory
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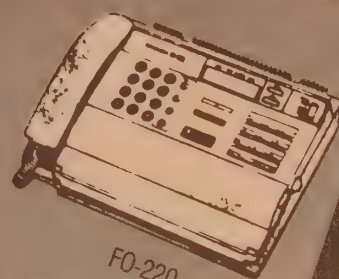


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- 18 Second Transmission



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4. 10 Double-Ended Clean Care Wands
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Northwestern Bell incorporates the latest technological advances with the best convenience features for you. The unit features memory dialing, transmit terminal identification, transmission report, communications journals, polling (consist of simple polling, turn-around polling, delay polling and daily polling), auto paper cutter plus much, much, more

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CUTTER
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Panasonic



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\$1188

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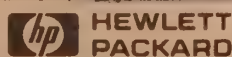
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- Clock/Timer indicates the time of day and duration of your call
- Display deny feature for secret telephone numbers
- One-touch automatic dialing for 28 phone numbers
- Memo dial; save/redial; automatic redial
- Tone switching
- Telephone line-powered operation for compatibility with tone-accessed long distance services, Centrex and other tone-actuated computer systems



\$69⁹⁹

Model KX-T2365
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Availability

AT&T SPEAKERPHONE 480

- Convenient "hands free" operation, frees you from the
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- Displays time/date and the number dialed.
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\$89⁹⁵

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Model KX-T3155

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- Display deny feature for secret telephone numbers
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- Switchable tone/pulse settings for compatibility with tone-accessed long distance services and other tone-actuated computer systems



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- Tone switching
- Privacy ringing lets you know if the caller is a friend or family member before you answer the call
- Switchable tone and pulse settings for compatibility with tone-accessed long distance services and other tone-actuated computer systems

\$149⁹⁵

Atari's Back!

Atari Marketing Execs Discuss Future Strategies

By Bill Gram-Reefer

1988 wasn't the best of years for Atari. The DRAM crunch hit the company hard, and many of its resources were strained by the company's acquisition of the failing Federated consumer electronics retail chain.

That was then, this is now. Unburdened by Federated, and with the DRAM situation under control, Atari announced a number of new products at Spring COMDEX, perhaps most notably the hand-held Portfolio portable, an XT compatible with an attractive \$399 price tag in keeping with Atari's long-time obsession with rock-bottom pricing and mass markets.

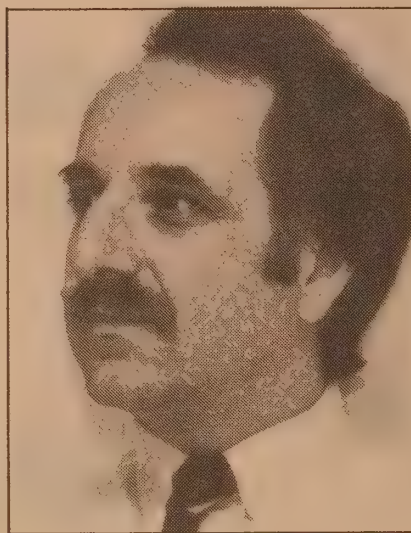
The company has also announced an aggressive promotional campaign, including TV ads featuring sound by Moody Blues founder Michael Pindar and stressing Atari's new Mega-based desktop publishing system.

Bill Gram-Reefer of *MicroTimes* recently visited Atari's Sunnyvale headquarters and found an upbeat atmosphere. He spoke with sales vp Michael R. Dendo and marketing vp for desktop publishing Joe Mendolia. They explained that the media campaign is part of their overall strategy to "pull out all the stops" in an aggressive campaign designed to re-establish Atari Computer as a major player in the US market.

Joe Mendolia: As you're probably aware, Atari has not been extremely active the past few years in the US marketplace.

There was a time-frame in which the company was very active in the US marketplace. Some things, you could say, may have got a little bit out of control during that time. Some people view it that way, some don't. However, when the company came up against the DRAM shortage, there had to be a decision. There was not enough DRAM to grow both the US and international European markets or the corporation.

The company had to make a critical decision at that point, whether to spread product across both places and basically hold position, or whether to focus the product in one area and become a leading product in that area. The decision that the corporation made at that time was to focus on Europe—and to come back to the US after that was achieved and after the DRAM shortage had passed, which



Atari marketing executive Joe Mendolia: "Big computer companies are forgetting the individual and the individual's needs. And that's an area we're going to focus on."

we feel that we're past at this point. Our DRAM availability is much larger than it was.

What happened, though, in the interim, is that that gave the US corporation a chance to clean up the US [distribution] channel and to apply a new segmentation philosophy that doesn't just allow any product to any dealer at any level.

We have different products that work in different marketplaces. At the moment, business computer dealers are our top-level dealers, and are the only people that are able to handle our Mega line. Below that we have something called computer specialty dealers, which are also computer dealers but not with the same level of support and service capabilities. Those people are able to carry, for instance, 520/1040 line, but they can't carry the Mega line.

We have a thought process on our entire line, even the new products we're about to bring to market, as to how the segmentation works. And we will apply that segmentation to the marketplace to try to keep the channels clear, and try to keep it so that the consumer not only gets his best value from shopping, but also can get the necessary support and service for the type of product he's buying.

Consumers feel like they "win big," sometimes, when they buy a high-level product at a very low cost, for instance through a mail order. That's until something goes wrong with that product. Then the consumer feels like he just got it. Somebody got him somewhere along the line here. As we all know, different products require different levels of service, different levels of support. And we're trying to segment our channels and the capabilities of our dealers and distribution channels so they fit the product.

Michael Dendo: I think that a good point that Joe is bringing up is that now that our DRAM problem is gone, the corporation has met the commitment that Sam [Tramiel, Atari's president] made last November at COMDEX. He said that he would go out, make advance DRAM buys, and he was going to provide the product and the dollars to rebuild the marketplace. Sam's met his commitment.

And on top of that, the company hasn't taken, if you will, the straight line approach, the easy approach to get a whole bunch of numbers real quickly. Our product line

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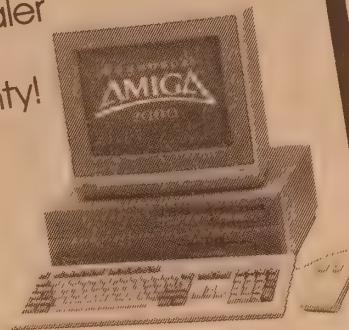
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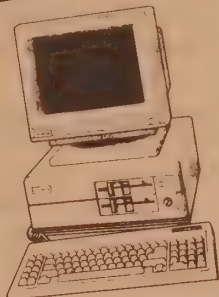
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ATARI

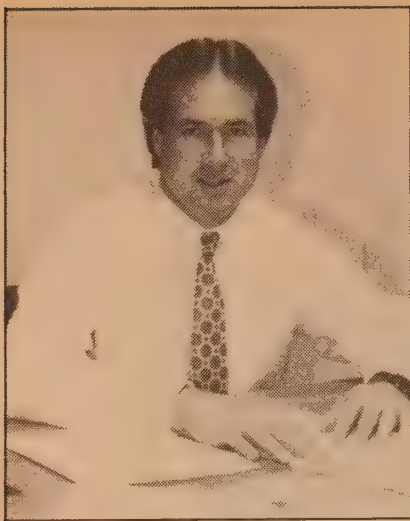
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Mike Dendo, VP of Sales at Atari, wants to be "real greedy" with the MIDI market.

could be very salable in other channels of distribution.

For instance?

MD: Mail order, as Joe said. We've already proven that we have a hot mail order product. That's why mail order was discontinued, because it hurt the dealers.

Mail order, by definition, doesn't require the same number of margin points to work as a dealer with a storefront, maybe paying certain points to the principals of a mall-store, with a service department. The cost of doing business for a retail dealer is just higher than it is for mail order.

What about mass merchandising channels?

MD: Well, mass merchandising channels were a methodology that the company utilized. I think some things, i.e., Federated, caused the outside marketplace to be a little bit hesitant to pick up an Atari product and then have to compete against an Atari-owned retailer, particularly in the West.

On top of it, prices on MS-DOS 8088 shrank and shrank and shrank to the point that most of your mass merchandisers carried MS-DOS. We believe that with some of our newer product coming out in the marketplace, that mass merchandising is definitely a channel of distribution that we may opt for.

JM: On certain products.

That's going to depend on the kind of technology and product, though?

JM: Absolutely. The computer group, in the past, has used some product in mass merchandise. And at this point we have some new products coming out which we think will work well in mass merchandise from the computer division. For instance, Portfolio.

MD: From Joe's and my perspective, the key to our business and continued growth and success is al-

ternative channels of distribution. In the future one of the great things that our new products will do for us is that we're now going to have the opportunity to broaden our channels of distribution, to entertain the higher quality mass merchants, to entertain key accounts.

[It isn't that] Atari Computers is not in key accounts because they all said, "We don't want your product." Atari Computers is not in key accounts because we didn't feel we were ready with product, pricing or administration to go in and support those people.

Tell us about the importance of the dealer channels, particularly the Business Computer Center dealers, and in what ways you're going to support them. Is there any fence mending going on here in light of the Federated adventure?

JM: Let me address the Federated thing and get it out of the way. Federated was a subsidiary of Atari. Plain and simple. It was not part of Atari Computer, it was not part of Atari Entertainment, it was not part of Atari Consumer Products. It was Atari Retail.

The different subsidiaries are independent and run as independent businesses. So the impact of having Federated or not having Federated to the computer division is only a question of "Did we have them as a dealership? Will they continue as a dealership under whatever they end up being?"

Federated, to us, was just another available channel. We had to sell into that channel as we had to sell into any other channel. Just because it was wholly owned by Atari does not mean we could walk in and take the business. They purchased under the same conditions as any other dealer.

Do you see a crossover between the music retailer and the office equipment channel and traditional computer resale channels?

MD: As you know, we are the number one computer for MIDI. As a matter of fact, we have a gentleman who just won an Academy Award using our computer to do his whole production. We look at that as a market that we want to be real greedy about. We're at 30-some percent now and we could have all of it; we want to have all of it.

JM: We also have new products coming out for that channel. We have a new computerized keyboard that is a new instrument. It's not a keyboard as people have thought of keyboards in the past. It knows how hard you're hitting the keys. On a standard keyboard when you hit a key, you hit a key on an electronic keyboard. This

one is velocity sensitive so it knows. It has no moving keys, they're pads.

But it can also take in information from CDs and such, so the keyboard is always playing in the same key as the music from the CD or other keyboards around it. It can sample the information and lock you in so that the first time through, there are no mistakes in the key or what you're playing. It's a completely new technology for MIDI.

MD: Its unique selling proposition is very simple. You can take someone who doesn't know anything about playing a musical instrument, and they can have the instant gratification of playing an instrument. That's the key: to not have to be musically talented or know how to play an instrument to play this device. Not to use a cliché, but for anybody of all ages, you can now play an instrument. That's very unique.

As the XT technology runs out of steam and there are no more innovations there, the price will plummet as those products increasingly find their way into the mass merchandising channel. On the other hand, the Intel 386-486 technology and Apple's redirection toward high-end support, high-margin product are creating a focus on serving customers at the corporate level. Is this an opportunity, then, for Atari to own the the middle ground?

MD: We look at what Apple has done, which is [that it] basically abandoned that arena, going after corporate America. Abandoning the majority of the dealers by virtue of quotas and everything else. And it is a unique opportunity.

JM: Companies are forgetting the individual. They're forgetting the individual and the individual's needs. And that's an area we're going to focus on.

MD: We're going to strengthen the retail marketplace just by definition of product line. However, there is product, which is going to be available in a very short period of time, six months or less, that is not retail oriented. So our new product lines are going to broaden our distribution capability.

We feel very strongly that, with the gains we are making in desktop publishing and with our new products, you will see our ability to broaden our distribution channel.

JM: This year is a growth year for Atari Computer in the US. Some people say a renaissance for Atari. We're determined as a corporation, and we have enough corporation at this point, to become a major player in the US market from the bottom to the top.

You're quoted as saying Atari will "pull out all the stops." What does

that include?

JM: Our advertising campaign, our new products, our new dealer programs that we put into place for this quarter; our growth of support personnel internally to support the dealers and consumers; the fact that we have prioritized the US for product so if we need product in the US, it will be here. We will not be short of product to deliver in the United States as the company has been in the past—that's what I'm talking about with "pulling out all the stops."

We're going to attack it on every front we can as a company. And unlike other companies that may be trying to get into the US, that are fairly constrained at the moment, we have the corporate resources to bring that focus back here. We're not an upstart. We have enough other divisions to support what's necessary to make this division successful. And we're

Mendolia:
"We have a full line of MS-DOS machines that we can bring into this marketplace. We're going to be playing in the UNIX marketplace; you'll see UNIX machines out from this corporation."

putting the right people in place. We're putting the management staff in place that has done it before in this industry.

With Apple competing with DOS in the corporate market, how do you plan to make inroads against those two dominant standards and establish Atari at that level?

MD: There are two issues with regard to distribution. Number one, the Portfolio product, that says Atari on it, will be in the hand of an executive who works at Procter and Gamble, [another] who works at Shell Oil. We're going to have instant credibility as a computer corporation

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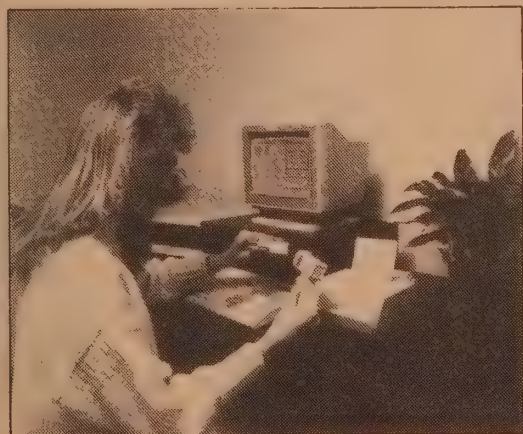
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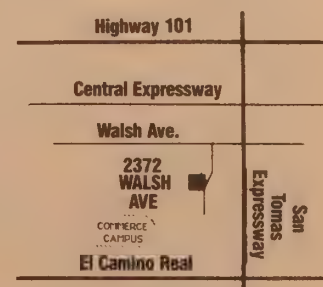
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through that alone.

That will avail us of additional channels of distribution. And when that outbound sales force walks in to make a computer sale, and they say, "Atari Computer," the executive isn't going say, "They're in the game business." Because that executive is going to have an Atari computer sitting on his desk that he paid \$399 for. And he's going to say, "I know who they are. They're the people I bought this great MS-DOS hand-held portable computer from."

How will you address the connectivity and networking issues?

JM: Go past that. Many people think of us as a company with proprietary operating systems. And we have a very good proprietary operating system in the ST and Mega lines. But we also have—not just in Portfolio—MS-DOS machines. Not all of them are in the US. But right now in Europe we have 8088 machines, 286 machines, 386 machines that we could bring in any time we want. We have Portfolio on the low end.

We have a full line of MS-DOS machines as a company that we can bring into this marketplace. We're going to be playing in the UNIX marketplace; you'll see UNIX machines out from this corporation.

You talked about Apple—where

Mendolia:
"Price/
performance is
our message, as a
corporation. We
think that other
corporations are
having customers
pay for high
corporate
overhead, rather
than for the
product that
person's getting."

has Apple made its greatest gains into the corporate marketplace today? It's been in their desktop publishing series. That's where they got in. And every other scheme hasn't worked.

Now, many corporations are still buying into that program. They're still not completely on-line with that program. Take one of our systems, for instance, the Mega 4 system we have on promotion right now. List price for the entire system including CPU and PostScript printer is less than list price for their PostScript laser printer.

We have more higher level and lower level programs for desktop publishing, as well as mid-range, than Apple does. We have PostScript capability with all of the same fonts that they have available on their system.

Now let's say this user is in a home office and he wants some compatibility. Say he wants MS-DOS. There's a company, Avant Garde, that makes an MS-DOS emulator. Put it in the machine, now you can run any MS-DOS software you want. You want to run Macintosh software? Spectra 128, another third party piece, allows you to run Macintosh software. And by the way, tests on that show it runs 20 percent faster than on a Macintosh SE.

So you want the flexibility, you

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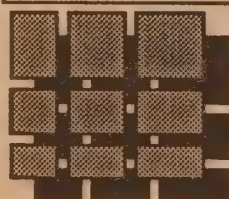
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The 286L offers the power of a desktop machine with portability

Mitsubishi Electronics, long a leader in everything from automobiles to television, has finally made its entry into the laptop field with the introduction of the MP 286L, a high powered 80286-based unit that offers lots of expansion possibilities. The computer comes in a wide range of configurations and offers numerous options.

Nevertheless, the MP 286L is a mixed bag of good and bad. The unit has four expansion slots—but they are all proprietary, meaning that you are limited to the cards that Mitsubishi sells. The keyboard has a wonderful feel and some great features, but an unusual layout. And finally, although the unit is a laptop, it does not offer battery operation as an option. So what Mitsubishi has done is straddle the line between a desktop unit, which it equals in power, and a portable, which it resembles in small size and an LCD display.

Configuration

The MP 286L comes in several configurations. The least expensive model uses two high density 3.5" disk drives. The most expensive model includes a 40 Mb hard disk and a numeric coprocessor. Each of the different models allows you to further enhance it by filling the expansion slots with options. Mitsubishi cor-

Mitsubishi's 286L

A Desktop-Laptop Hybrid

By Ed Kahn

rectly describes its machine as a desktop/laptop unit. And for those who require the portability which it offers, it may well fill the bill. The unit I reviewed, the 286L-240EVP, features a 40 Mb hard disk and a numeric coprocessor—an option that is not user-installable. It carries a retail price of \$5395.

Features

Even though this unit does not come with a battery option, it is designed for those users who will carry it from place to place. One of the options is a simple carrying case (\$99), but more significantly, the standard unit comes with a switch which allows you to operate it on either 115 or 230 volts. This means the unit will operate in most places in the world where electricity is available. One of the advantages of this unit over some of the battery-operated portables is that there is no external power supply to contend with.

The unit comes with an extra large LCD screen measuring 11" diagonally. It features a high resolution 600 X 400 lines in text mode and can be set up to show either dark letters on a light background or the opposite. Unlike any other machine I have examined, this one has a switch on the display that allows you to reverse the display. I always prefer the dark letters on a light background, and flicking the switch is a lot easier than selecting an inverse display through software.

Standard equipment on the laptop includes an enhanced graphics video controller card, which comes installed in one of the four expansion slots. Mitsubishi was wise to install the video system as a card in order to accommodate new video standards that will keep the machine up to date with the latest in video standards. So far the company has already made one such upgrade. By setting dip switches on the card, you have a choice of external monitor options ranging from monochrome through EGA. In monochrome, the display shows eight shades of gray to take advantage of color software.

The keyboard is as full as any laptop's, with separate keys for all cursor movements rather than the inclusion of an "Fn" key which forces the cursor arrow keys to double for PgUp, PgDn, Home, and End. But the layout is a bit unusual, with function keys one through eight on one row and nine through twelve on a row above the others.

An embedded numeric keypad is well thought out, but still doesn't quite work for me. They never do, so this is not a shortcoming of Mitsubishi's design. The use of the optional numeric keypad (\$158), however, makes the keyboard better than what comes with most desktop units, because the standard keyboard still has

Mitsubishi has achieved a good balance with this unit. If you do not need battery operation, but want portability and power, this is a machine to check out.

all the cursor movement keys so you don't have to choose between using the numeric keypad for numbers or cursor movement. You end up with the equivalent of one of the nice full keyboards you can buy from third party vendors. I am glad that Mitsubishi provided indicators which light when the CapsLock, NumLock, and ScrollLock keys are toggled on. They have also thoughtfully provided a reset button—all too rare on both desktop and laptop units.

Mitsubishi offers a high density external disk drive (\$525) as an option. I like this drive better than many I've seen because of the smooth way it works with the computer. It gets its

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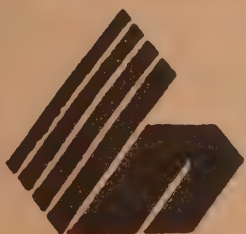
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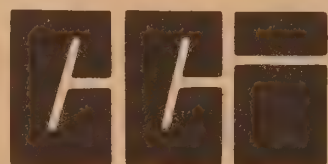
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R E V I E W S

power directly from the MP 286L rather than from a separate electrical outlet. This offers several advantages, including the freedom of not having to turn on the drive in addition to the computer itself. I guess this is one of the advantages of designing a laptop that doesn't have to work around the requirements of battery operation. The result is that you have a laptop that offers the same ease we have come to expect from a desktop unit: a hard disk, a high density 3.5" floppy, and a high density 5.25" floppy, all ready to go when you turn on the computer.

Slots

Of the four proprietary expansion slots in the MP 286L, one holds the video controller card. A second slot accommodates the memory expansion card. A 2 Mb expansion card is available for \$1530. Mitsubishi has thought out the memory expansion thoroughly. This memory is configurable as either extended memory or as expanded memory (EMS). You can select any or all of the 2 Mb as expanded memory. Whatever portion you do not designate as expanded memory—selected in multiples of .5 Mb—will be configured as extended memory. This flexibility permits the use of any software that you may wish to use. This arrangement provides for an extremely powerful and versatile computer.

A third slot can use the internal 2400 baud modem (\$499). The modem does everything that you would expect from a Hayes compatible unit, but unfortunately Mitsubishi did not include a speaker in their design. Over the years I have grown accustomed to expecting a speaker so I know what is happening. Some of the software I routinely use requires this feature. *Hotline* 2.1 (\$99), which I use for almost all my telephone dialing, requires a speaker, as you pick up the telephone receiver only after the party answers. Mitsubishi's design does not allow me to use this software, which has become an integral part of my computer use. You can avoid this problem, however, by using an external modem connected to one of the two serial ports that comes with the computer. Although this does not make quite as compact a system, the tradeoff is that it solves a problem and saves a few bucks in the process.

There is a fourth expansion slot,

but as of this writing Mitsubishi has no cards to fill it. They are, however, obviously allowing for future expansion needs by the inclusion of the additional slot. At some point they will have to make provisions for networking if they are to make inroads into the corporate workplace.

Conclusions

In addition to the excellent hardware configuration, Mitsubishi has included a fair amount of software to simplify setting up the machine and checking it out. A disk of diagnostics software, as well as MS-DOS 3.3 and GWBASIC 3.2, comes with the unit. In addition, with the unit I reviewed, Mitsubishi included an elaborate disk caching program, *SuperPC-Kwik*, which significantly speeded up lots of operations. This system is ready to go once you install your applications software.

Mitsubishi has come about as close as you can get to offering a desktop computer in a laptop configuration. With the addition of an external EGA monitor, you have just about everything except the expansion possibilities provided in a conventional desktop unit with standard expansion slots. The tradeoff, however, is the portability of the unit. You can unplug the monitor, external disk drive, and numeric keypad and carry the basic unit from location to location with a minimum of hassle. Mitsubishi has achieved a good balance with this unit. If you do not need battery operation, but want portability and power, this is a machine to check out. All the prices I have mentioned are list, and I am certain that street prices will be competitive with other machines in this class. ■

Resources:

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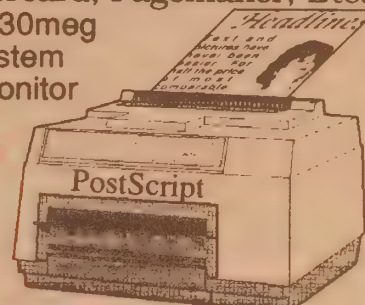
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Subject: The Complete PC FAX board.
of Pages (including this cover sheet): 1

Message:

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There are 23 lines available for use in the message area.

This is line 24.

If you do not receive all pages, please call back immediately.

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Illustration one: a fax sent by the Complete PC fax board.

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scanners. Also, if you have a laser printer, you can now receive plain paper faxes, a very expensive feature if you purchase it as a standalone fax machine.

The same day I got the CFAX board, I had to send a fax from New Jersey, where I live, to Los Angeles. I sent the files using the CFAX board. About an hour later, I received a call telling me that the faxes had been received. The callers wondered what fax machine I was using, since, they said, these were the "best looking" faxes they had ever received. On investigating, I found that the quality of a fax is determined by the sending machine, not the receiving machine. That unsolicited statement sold me on the quality of the CFAX board.

That's not all. In addition to the 9600 baud fax board, there is a port for the Complete Hand Scanner (which we will test at another time) and an optional 2400 baud Hayes compatible modem add-on board. Additionally, during the second quarter of 1989, there will be an optional upgrade to add voice mail capabilities to the fax board.

Installation: Still A Few Unanswered Questions...

The installation is rather easy. Plug in the board, connect a single-line phone line, and run the installation software. I actually used a two-line phone, and CFAX grabbed the first line and worked perfectly, while still passing both lines through to a DuoFone195 from Radio Shack.

The CFAX documentation warns that you should only use the first line of a two-line phone as the fax phone number. That is correct if you try to run the CFAX board from an RJ14. However, I also split the two lines into separate RJ11 outlets and tried to run CFAX on line two. It sent properly, but would not receive.

That didn't make sense to me, since when you split the two lines into

separate RJ11 plugs, they should be identical electrically. I tested both lines 1 and 2 with a telephone line tester; both tested as good lines. Finally, I called technical support to find out why CFAX would not receive when connected to line 2. Neither of the two tech support people I talked to was able to give me an answer.

The first person I talked with had no idea what I was talking about. The second person said that he gave only "General Advice" and could not help me. No one ever called back about this problem.

Well, I thought, line two consists of the black and yellow leads (red and green are line one); maybe I should reverse them and see if CFAX would work. No such luck. Reversing the leads just turned off line two at the source.

Three days after all this, I talked with a Phil Miller from Complete's technical support group. He said that there was no reason why line two would not work, assuming that both of the middle lines were active after the two twisted pairs were split apart. I hooked up the CFAX to line two, and, sure enough, it received and sent faxes correctly to the tech support folks.

There it is, dear reader, the ultimate frustration. Why did the CFAX board not work the way it was not supposed to work, not work when I tried to make it work with line two, not work when three different fax machines tried to send me faxes on line two, always work when on line one, then work on line two after I talked with the tech support folks trying to understand why it would not work?

Talking to some engineer types gave me a potential answer. It seems that many of the fax machines, which they say support the Group III protocols, really only support a subset. When one machine is not able to send to or receive from a certain machine, that might be the problem. And I personally have found a machine in San Diego which will not receive my

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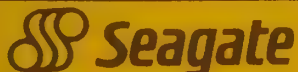
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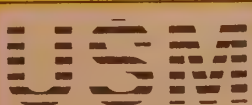
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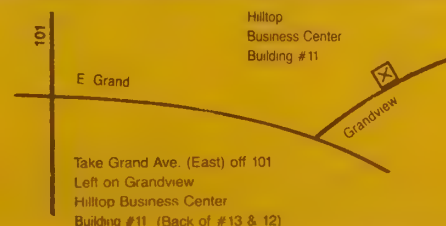
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Illustration two: a faxed graphic converted to a TIFF file and edited in Arts & Letters.

faxes, even though every other machine seems to receive them without problem.

The 2400 baud modem is a small add-on board. There is only one possible way for the modem to be added to the CFAX board, so installation is a snap. I tried the modem as both COM 1 and COM 2. No problems with either. I also tried the modem with my *CrossTalk* for Windows and *Procomm* under DOS. Again, no problem. It acts as a 2400 baud Hayes modem. The modem comes with *Bitcom* terminal software. I never bothered to even load *Bitcom* onto the disk since everything else worked perfectly.

The only thing you will miss is the speaker monitor from a regular modem. Since there are no blinking lights to see or sounds to listen to, you may have some trouble if you're trying to determine whether you're actually dialing or connecting with other computers when you have problems.

However, since there is a speaker connector as part of the card, I thought that this might give me the speaker I needed to monitor the modem. It looked like a standard mini plug connector. I tried connecting a couple of different speakers to the speaker port, but was unable to get any sounds to emanate. The

speaker connection is shown in the documentation as being on the board, but there is no information about what to do with it, how to use it, or even what type of plug you must have to connect to the port.

After much frustration, I finally called technical support and asked them what was going on with the speaker port. They said that the speaker was in place to support future voice mail features. Then, three days later, I talked with someone else from technical support. They said that the speaker would work with Radio Shack speaker #2771008 and a #42-2420 shielded connector.

Making a quick trip to my local Radio Shack store, I purchased the \$11.95 battery-powered 200mW amplifier-speaker and the \$2.29 6-ft audio cable with a 1/8 inch mini plug. If you don't have one around, you will also need to purchase a 9-volt battery. I have a plug-in connector for 9-volt batteries, so I used that. It worked perfectly. With this setup, it acts as does any speaker on any modem I've ever used. I guess I now have my speaker for when Complete PC's voice mail setup arrives for testing.

Using The FAX Board

The CFAX software is actually two separate programs: a TSR back-

ground program, which will send, receive, print and convert to and from fax formats while other programs are running (assuming there's enough memory left after the background program loads to run another program), and the menu-driven CFAX program, which gives you complete control over all of the FAX activities. When the background program, for example, starts to receive a Fax, a small red box with Fax in it appears in the lower right corner of my VGA screen. Then, just to keep you in the know, CFAX uses a series of beeps to let you know what's going on, with one beep saying that the fax was sent or received successfully, two beeps saying there was a problem, three for a file or printer error, four telling you that you just ran out of disk space, and one short, one long to say that someone wants to switch from fax to voice transmission on the same line.

The background program unloads automatically if you reboot the computer with the telephone off-hook. You can also tell it to unload itself from memory. I work with some TSR programs which assume that you will always want them there, and the only way to remove them is to reboot. Normally I use the mark-and-flush and shareware program I've downloaded from CompuServe. When I boot the background program, I place a flush marker in front of the background program in memory. Then, when I am done with the TSR program, but don't particularly feel like rebooting the computer, I type flush, and flush cleans up memory from active memory back to the first flush marker it finds. Works great, and I don't have to reboot.

You can use three methods to send or receive faxes: automatically in the background, manually when you use the CFAX menus and are already on the phone, and manually in the background when you are in other applications but are already on the phone. Also, another fax machine can question or "poll" your CFAX board to see if you have any faxes to send to it.

If you remembered to run the background program before you entered into an application, a ALT-F will pop up a menu which allows you to send or receive faxes. Some fax machines issue a beep over the phone about every two seconds when they call another fax machine. If you answer your fax line, and hear the beeps, you would use the pop-up menu to initiate receiving the fax.

There are a set of DIP switches on

the CFAX board which you can use to change the CFAX I/O addresses. These DIP switches also let you send the internal modem to either COM 1 or COM 2. Lastly, you can set switches to let CFAX know if you have a scanner attached, with or without a modem. The documentation is easy to read and very direct as to which switches go up or down depending on the various hardware options.

The back of the CFAX card has four plugs, one for phone input and one for phone output, one for a speaker, and one for the scanner.

Software installation is easy. When you run the installation program, you can choose between a first-time installation, modifying a current setup, or just changing or installing a printer. The installation program lets you change the CFAX I/O addresses, set one of four page scanners (CFAX supports the H-P, DEST, Canon, and MicroTek scanners). Here also you can specify your monitor and display card. You can also specify your Station ID and the CFAX phone number. These two items become defaults which are used in the cover sheets or are displayed if your CFAX board is polled from another fax machine.

Another section of the installation program lets you specify where you have your printer; it supports COM 1 or 2 or LPT 1, 2, or 3. Then you must specify the paper size and type of printer you use. Laser printers may also be selected in a variety of DPI sizes. I found that item number 56 out of 131 possible configurations and printers was the H-P LaserJet II at 300 DPI in Portrait mode, my kind of printer.

There is a telephone system setup as part of the installation procedure. I let the defaults ride, but the first time I tried to receive a fax, I had problems. A quick call to The Complete PC told me to set the line compensation adjustment from 0 to 3 and change the maximum communication errors per page from 55 to 200; after that, everything worked well.

The tech support folks responded quickly to my call. They returned my call immediately. They sent me a fax, and then gave me the suggested settings. The only problem was that it was a toll call for me initially. Sorry, no 800 number for tech support.

CFAX also suggests that you change your config.sys file so that Files is set to 99 and Buffers to at least 24. I tried lowering that 99 to 50 and ran into some transmission problems, so I guess they are serious about that ab-

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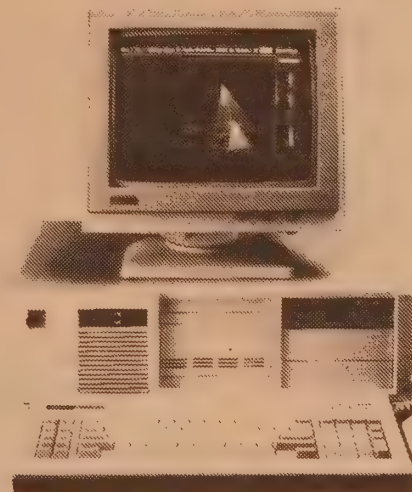
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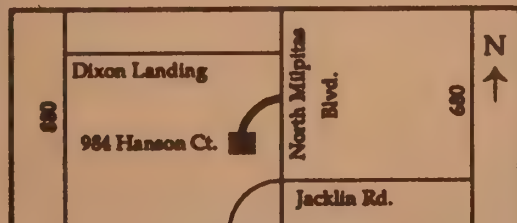
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The same day I got the CFAX board, I had to send a fax from New Jersey, where I live, to Los Angeles. I sent the files using the CFAX board. About an hour later, I received a call telling me that the faxes had been received. The callers wondered what fax machine I was using, since, they said, these were the "best-looking" faxes they had ever received.

surd number. Actually, 99 seems to be a favorite number with the CFAX programmers: up to 99 faxes can be sent, 99 received; there can be 99 recipients for each outgoing fax; 999 entries are allowed in the phone book; 99 recipients can be in a group list; 99 is the maximum number of group lists; 99 files can be in the print queue; 999 entries can be in the received log, and 999 entries can be in a sent log. Then, for some unknown reason, the programmers switched to 25: the CFAX program can send up to 25 files per phone call, or send 25 files through a polling list, or convert up to 25 files from the CFAX conversion menu. Boggles the mind, doesn't it?

The CFAX comes up with a menu which allows you to receive or send faxes, and enter phone numbers into a phone directory. It lets you work with a fax directory, shows you the current status of all CFAX activities, or allows you to modify some special features of the program.

When you set the system configuration, you can tell CFAX how many times to let the phone ring before it answers, how many times to redial a fax machine it is trying to reach, how long to wait between retries, whether to automatically attach a cover sheet to all sent faxes, use a standard or fine (300 dpi) format for received faxes,

convert the PC extended character set to ASCII during sending (good for old style *WordStar* files), print the fax automatically during sending, receiving, both or not at all, beep on errors, set the polling password for your CFAX board, and use up to two credit card numbers during the dialing process.

Be careful here. On my H-P LJ II, it takes up to 10 or so minutes to print a fax. If you automatically print on sending or receiving, you may find your printer doing its thing when you really want to do something else. I would recommend receiving and storing all faxes, reading them on the screen, then printing only those you need.

Sending a fax is rather easy. You go into the send menu and list the faxes you wish to transmit. There are five different ways you can send a fax: from your word processor using the pop-up fax window, from any ASCII file, from files which you scanned with a compatible scanner, from a single page cover sheet which you can create, or from a small text editor which CFAX contains which allows you to create short memos. If you wish, you can send a default cover sheet, or you can create a separate cover sheet for each fax. Each cover sheet can contain up to a 23-line message. Creation is easy: highlight the name of the file you're going to fax, press F3, and fill in the pop-up form.

Illustration one shows a cover page which I created and sent while testing the CFAX board. You can see the text quality as well as the space for messages which are provided.

The sending menu also lets you specify the receiving phone number, and the date and time you wish the file to be sent. You can set up CFAX so that it only sends faxes at the most economical times. You must also specify the type of file you are faxing: ASCII, which needs page breaks every 11 inches, Epson FX formats, Epson FX graphic files, *PCPaintbrush+* files, *Dr. Halo II* files, and Microsoft *Windows Paint* files can be sent without modification. CFAX will convert each of these files to the Group III fax format.

As you are entering files to send, you can also specify destinations from the phone book which you created earlier.

Receiving faxes is normally automatic, although you can, as mentioned earlier, send and receive manually. In the received menu, the faxes are listed along with their status.

When you print or view a fax, the status indicator will note that you have done so. Later on, you can delete faxes you no longer need.

Just as you can convert specific file formats to faxes for sending, you can convert received faxes to some specific formats: TIFF, *PC Paintbrush+* PCX, *Dr. Halo II* CUT, and Microsoft *Windows Paint* MSP. Alas, however, you cannot convert to a text file. You can receive a file, convert it to one of those formats, and then include that file as part of a document, assuming that you have a word processor which supports this type of approach. I, for example, received an organization chart from a client, printed it on my LJ II, worked on it, converted it to a TIFF, then included that TIFF file as a graphic frame in *Ami* when I prepared my report as part of a consulting assignment.

Illustration two shows a fax which I received. Using the conversion facility, I translated the duck to a TIFF file so that I could use the graphic in a presentation I was about to do. However, *Arts & Letters*, which I wanted to use to trace the TIFF file and create a HP 7475A transparency, would not load the CFAX-created TIFF file, saying it was not a standard format. However, *WinScan*, from Palantir, read the TIFF file with no problem. I then saved as a TIFF file created by *WinScan*, and *Arts & Letters* imported it with no problems.

Viewing faxes on the screen might be the only thing you need to do, assuming you don't need a hard copy. When you view the fax, you can see it full- or half-page, zoom in to view details, flip the fax if it was sent upside down, and rotate the fax if it was sent sideways. CFAX also automatically supports a Microsoft mouse for your use in the viewing mode.

When CFAX receives a fax, it assigns it a name like FAX0002, FAX0003, FAX0004. You can, if you wish, assign your own names to these fax files so you can recognize them on your disk. However, you must remember to use the CFAX assigned extensions. I renamed, in DOS, FAX002.001 to DUCK.FAX. When I went to transmit it, CFAX went berserk and transmitted two pages of garbage. Turns out that CFAX wants cover sheets to end with the extension ".000"; the fax itself is numbered page by page starting with 001. A menu item will move a fax to another name. If you use the menu to do the moving, then it correctly assigns the right extension.

When you print faxes, you can queue them automatically and let your printer grind away. Remember that the fax is a graphic file, not a text file, and will take a long time to print. If you have saved a bunch of faxes, you can also print them from the DOS prompt. If you are printing automatically, CFAX uses an additional 75 K of memory.

CFAX also will merge two or more fax files into a single image. When you start the merge process, you are asked if you want a transparent or a solid overlay. Then you move the pointer with your mouse (or cursor) to where you want the upper left hand corner of the overlay and place it.

You can also send binary or text files to another computer which also has a CFAX board. A separate menu lets you use that 9600 baud modem to just send the files.

CFAX *does* work from within Microsoft *Windows*; boot the background program prior to running *Windows*. CFAX does not work from within *DESQview* or, according to the documentation, from any application that uses a Hercules card in a graphic mode.

There are a number of programs in the CFAX directory, and you can run many of them as standalone programs using command line switches to do what you want. For example, if you have some faxes stored on the disk and you want them to print, you do not need to load both the background and foreground programs. Just type FAXPRINT, and the file will be printed on your default printer. You can also send and convert files from the command line, as well as work with the supported scanners.

Conclusions

All in all, CFAX is a nifty addition to the capabilities of your computer. Since you already have all the electronics, you can get a plain-paper fax machine for just a few hundred dollars. The quality of the sent and received faxes will be excellent. If you have an office and an old PC XT or the like, getting a Complete CFAX/9600 board may be a really cheap way of getting that most modern of business necessities: a fax machine. The only thing you give up is the ability to scan and send. Everything else works. That, along with the quality of the sent materials, is a good reason to consider a CFAX board instead of a standalone fax machine. ■

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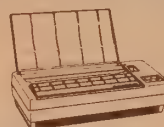


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Xerox Presents offers sophisticated features and an easy-to-use interface.

Let's face it, Xerox Corporation gets a lot of grief. No one who's ever discussed the origins of the Macintosh can resist slinging a little abuse their way. A former boss of mine—an ex-Xerox employee—described the company as having elevated the inability to bring products to market to a high art. And while it's hard to forget the stuff that got away—the Macintosh technology, PostScript, and Metaphor (among others)—there's only so much penance a company can be expected to do.

But almost behind people's backs Xerox is turning into a respectable little software house (as well as a hugely profitable copier company). With the immensely popular *Ventura Publisher*, and their recently released forms product, Xerox may yet earn some payback for the jibes they've taken over the years. *Xerox Presents* is a very capable presentation graphics program which runs on PCs and compatibles under the *MS Windows* operating environment. Designed for Xerox by Cricket Software, *Xerox Presents* is an adap-

Xerox Presents Windows-Based Desktop Presentations

By Steve Guttman

tation of Cricket's *Cricket Presents* Macintosh program.

It's always surprising to me how radical the differences between software programs that compete in the same "category" can be. In the PC domain, it's not just *Windows* and non-*Windows* applications which create this difference, but a program's orientation, the audience its features are targeted at, and most importantly, the paradigm which the program forces a user to adopt to bridge the chasm between "artist's conception" and printed output. *Xerox Presents* sees the requirements of presentation graphics as melding the features of drawing programs with those of page-layout software. This is quite different from the orientation of, for example, *Harvard Graphics*, which emphasizes ease of use. Thus, a simplistic but useful way of approaching *Xerox Presents* is to think of it as a cross between *MacDraw* and *PageMaker*.

The particular forte of *Xerox Presents* is drawing ease and sophistication—no big surprise, given that Cricket Software specializes in drawing and graphics programs. The *Xerox Presents* screen looks reassuringly like that of most Macintosh drawing programs and many of the drawing tools—boxes, arcs, lines, and polylines—look and act just as you would expect. Thus, at an elementary level, you can use these tools to create the same kind of artwork that you would in a *MacDraw*-type environment. In addition, two special tools—a graph tool and a table tool—let you create those kinds of objects within your presentations. The graph tool uses a mini-spreadsheet for data input and lets you choose from a variety of graph types and labeling options similar to *MS Excel*. The table tool lets you create an editable, flexible, resizable table to include within your presentations. Both tools can accept numbers imported from files in *Lotus 1-2-3* format (although, curiously,

you can only import an entire file—not a range within a file).

If these were the only distinguishing features of *Xerox Presents*, it would be no great shakes. Fortunately, the capabilities of the program go deeper than this. In particular, the ability to use "page styles" is one way of streamlining the production process. Page styles are basically style sheets for presentation graphics images, although the current implementation in *Xerox Presents* is not especially powerful. A page style is a presentation page which has been saved within a separate file for later retrieval and modification. Thus, commonly used graphics like organization charts and bullet charts might be saved as page styles. Applying a page style entails simply pasting the saved image onto a blank presentation page, then manually replacing the existing graphics and text with

A simplistic but useful way of approaching Xerox Presents is to think of it as a cross between MacDraw and PageMaker.

new elements as necessary. Since you must manually replace many elements, page styles are not always big time savers. Fortunately, *Xerox Presents* includes a wide variety of predefined page styles as part of the package. The current crop of Macintosh presentation graphics tools like Aldus *Persuasion* and the latest version of *MS PowerPoint* use more sophisticated paradigms to make the creation of presentations within their

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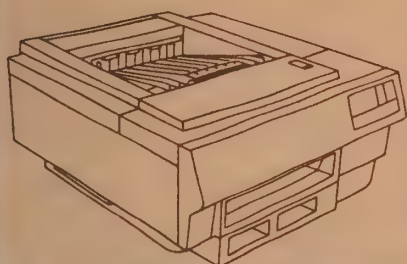
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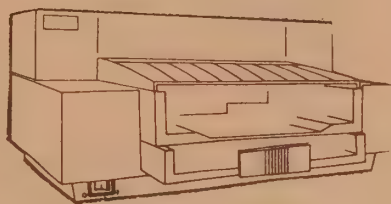
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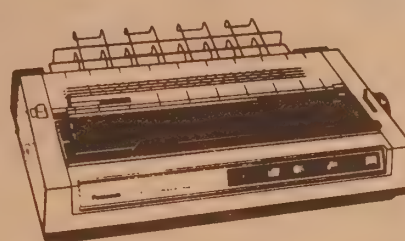
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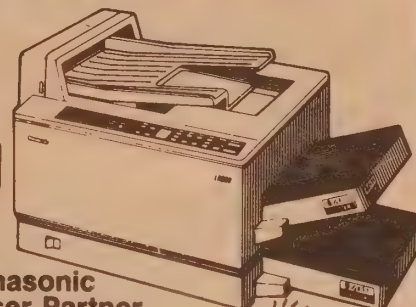
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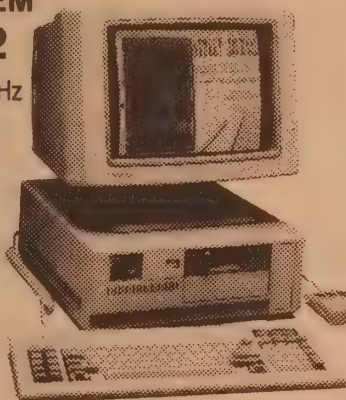
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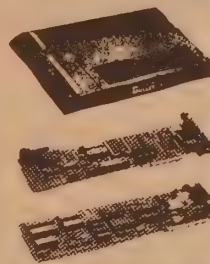


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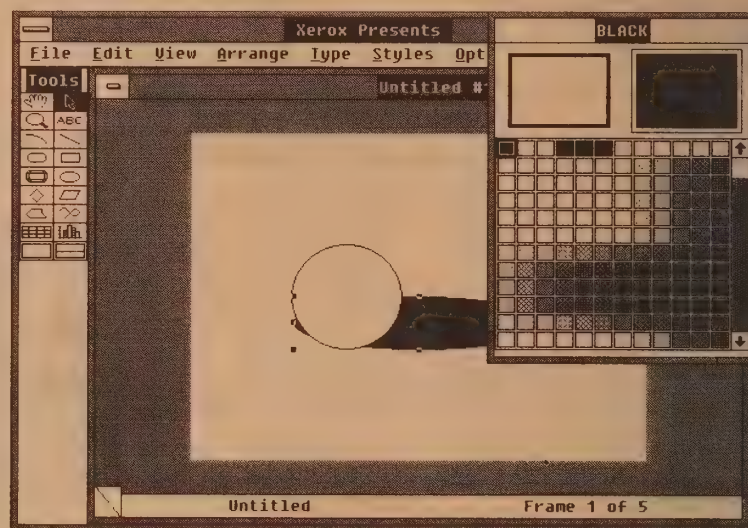
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Xerox Presents lets you work in any of four different "views" while designing your presentation. "Frame view" is the normal mode in which you'll create most of your graphic pages. In frame view, presentation pages are shown and are editable at full size. "Background view" is analogous to *PageMaker's* master pages—it lets you draw items such as borders and logos which will appear on every page of a presentation. You can also choose a background color or blend from an extensive color palette.

through menus and dialog boxes are rather un-ergonomically designed. For example, almost every time you need to change a font or type size, you have to branch through three dialog boxes. Every time a dialog box is erased the underlying graphics have to be redrawn. And believe me—your sense of amazement at seeing your own creation drawn over and over starts to wane after about the thirtieth time. Admittedly, this is a pet peeve of mine, but why not simply allow the user to choose fonts from a main menu selection? Too easy, I guess.



Xerox Presents offers easy graphics handling and drawing in a Mac-like environment.

"Notes view" lets you create a set of reduced page images with annotations to use as speaker's notes. And "handout view" lets you tile multiple images on the same page to create audience handouts.

The program has a plethora of other options too numerous to mention in detail here. Of special note are the text handling features of *Xerox Presents* which give you control over tabs, bullets, and justification, as well as type style. Like most presentation graphics programs, *Xerox Presents* also includes the ability to create computer-controlled video presentations. Its special effects options are pretty slick.

You'll want at least a fast AT-class machine to run *Xerox Presents*. And while it will run in 640 K, a full meg is recommended. In addition to standard *Windows* output devices, *Xerox Presents* can also create output for the Autographix overnight slide service. You can deliver your presentations to Autographix via diskette or modem.

While the program does have many strong features, it has a few downsides as well. In particular, some of the ways of accessing features

In addition, *Xerox Presents* is not really oriented toward helping you create presentations quickly. While it's possible to create more visually sophisticated drawings than with some other presentation graphics tools, it's not the most friendly program when you need to whip up the simple stuff—like that bar chart you forgot to prepare five minutes before your meeting.

While the problems I've mentioned are annoying, they don't highlight any fundamental flaws in the program. It needs some aging—a little customer feedback, a few small pum- mels by the press. And let's face it—this is version 1.0; it's going to im- prove. When it does, *Xerox Presents* is going to give the boys at Software Publishing and Lotus a good run for their money. ■

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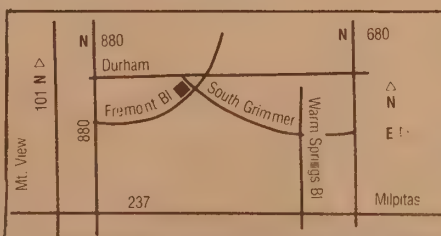
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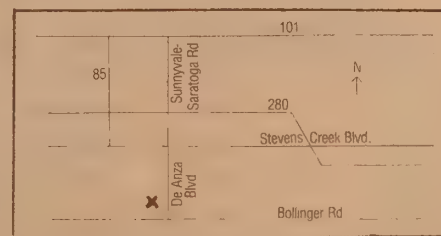
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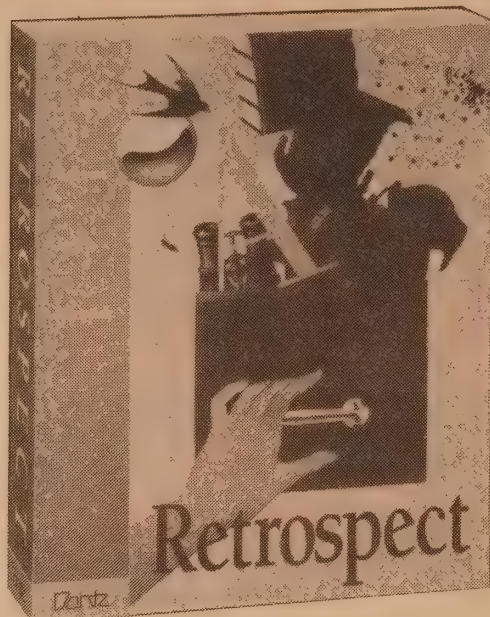


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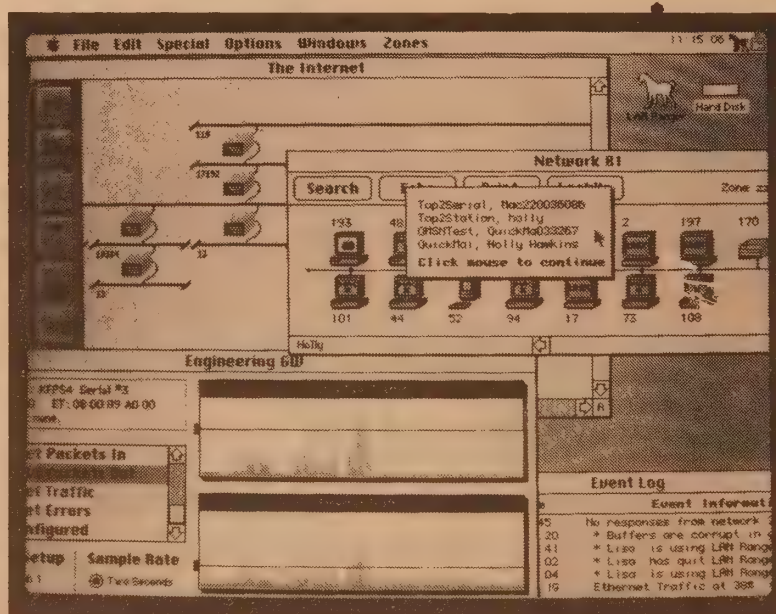


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Retrospect, from the makers of *DiskFit*, a backup utility, is a new archiving utility that will archive files to a wide variety of media, including diskettes, removable disk cartridges, DC-2000 and DC-600 tape cartridges, optical cartridges, and file servers. The utility allows files to be moved from source to destination for pure archive operation, or copied in order to back up files remaining on the source volume. *Retrospect* creates structured archives that allow rapid access to an unlimited amount of data. An archive catalog stored separately on the user's hard disk lets users reference their archived files without inserting the storage media. *Retrospect* also allows automatic file selection by using Selectors that match files according to characteristics such as name, size, date, type, position, even icon color. Other features include full AppleTalk network support, compression of archived files using the Lempel-Ziv algorithm, and encryption to the DES standard to satisfy government data security requirements. (\$249) Dantz Software Development, 1510E Walnut St., Berkeley, CA 94709. (415)849-0293.

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Multi-Ad Services has introduced the first full-featured professional ad layout program for the Macintosh. *Multi-Ad Creator* is intended for fast ad layout and precise typographic control of single-page, art-intensive documents created by newspapers, ad agencies, graphic designers, and retailers. It has an object-oriented environment making it possible to create a complete display ad in black or white halftones or color in a fraction of the time normally required. *Multi-Ad Creator's* unique ad makeup capabilities include free rotation of grouped graphics and text, copyfitting, suggested layouts, advanced object drawing and manipulation, controlled duplication of objects, customizable ad layout environments, high resolution PICT borders, "design sheets" with standard ad attributes, and the ability to export PICT files for use in page layout programs. Text features include automatic copyfitting, rotation, text wrapping to fit inside or outside an object, kerning to 1/1000 em, horizontal scaling, text wrapping around or within objects, text flow into blocks, color or gray scale text, reverse text, superior numbers, offset baseline, and advanced styling. A Mac with at least a megabyte of RAM and a hard disk are recommended. (\$995) Multi-Ad Services, Inc., 1720 W. Detweiller Dr., Peoria, IL 61615. (309)692-1530.



Network Management And Diagnostic Software For AppleTalk Networks

LAN Ranger is the first local area network management and diagnostic software to take full advantage of the Macintosh graphic interface in monitoring and administering AppleTalk networks connected with FastPath 4 Ethernet gateways. Using icons, *LAN Ranger* automatically creates a logical map of network topology representing available hardware and software resources. It graphically displays internetwork traffic and logs events in real time, saving them for later examination. As a monitoring tool, *LAN Ranger* isolates network traffic trouble spots, pinpointing sources of overload, and displays activity by source, type, and duration. And as a diagnostic and troubleshooting tool, *LAN Ranger* helps a network administrator

to identify and resolve AppleTalk internetwork conflicts using easily understood real-time displays. Currently bundled with Kinetic's FastPath 4 LocalTalk-to-Ethernet gateway, *LAN Ranger* software will be available as a separate product in the third quarter of 1989. Kinetics, A Division of Excelan, Inc., 2540 Camino Diablo, Walnut Creek, CA 94596. (415)947-0998.

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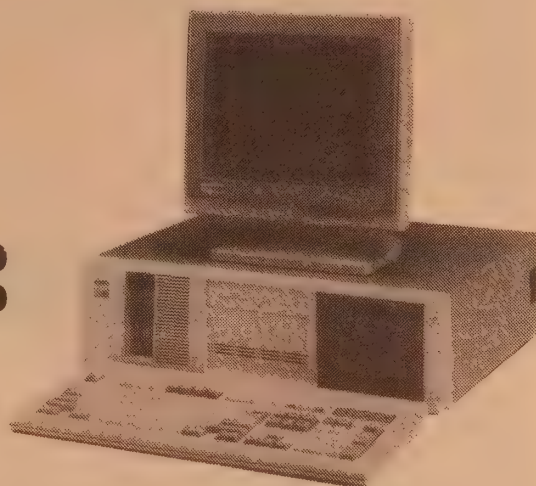
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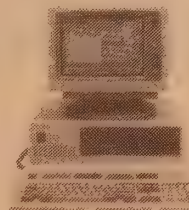
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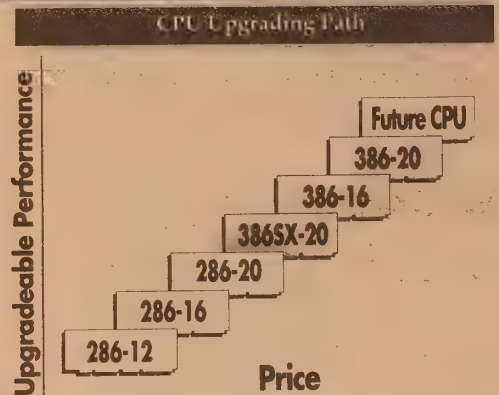
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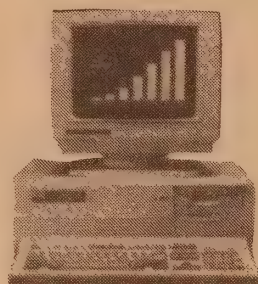
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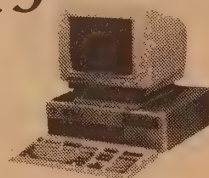
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Aldus Persuasion:



Desktop Presentations For The Non-Artist

By Mary Eisenhart

Rose Cultivation



Using imported graphics and Persuasion's easy-to-use text features, creating slide presentations is quick and simple.

When Aldus announced *Persuasion* last year, amid much fanfare and celebration of strategic alliances, it was touted as the software that would bring the promise of the Macintosh to the suddenly-hot field of desktop presentation. This package is so simple, the hoopla suggested, that even a computer-phobic senior executive can whip up a professional-looking slide show, complete with handouts and lecture notes, in just a few minutes. The power to be your best, indeed.

In many ways, *Persuasion* comes remarkably close to living up to its PR. Having recently spent a couple of hours talking a brand-new Mac user through a hard disk installation over the phone, I am not prepared to believe that a computer illiterate can realistically

expect to wow the CEO with the arts of *Persuasion* by starting the tutorial an hour before the meeting. However, the program's interface is simple and elegant; once you've grasped a few essential principles about what layers do and how to import different types of files (graphics in various formats, database and spreadsheet files in either WKS or ASCII), you're able to create dramatic effects by simply grabbing selected elements and moving them around till you've got them the way you want them. After you've mastered the basics, *Persuasion* offers plenty of depth—presentations can be enhanced with such niceties as two-color radial fills and exploding pie charts, and you can take advantage of the program's template-creation capabilities to save yourself a lot of wheel-reinventing when it's time to update your information later (and if even that's too much design work for you, *Persuasion* thoughtfully provides you with a nice assortment of Auto Templates suitable for different types of presentations). Much of *Persuasion*'s interface is so intuitive and streamlined compared to, say, *PageMaker*, that Aldus might do well to adapt it to an entry-level DTP package.

Who Needs Persuasion?

If you spend much of your working life making visual presentations based on slides, you should probably take a very good look at this package—the color handling and graphics options are powerful and a lot easier to deal with than some of their counterparts in standalone programs. Especially if you didn't spend much time in art school before hitting the job market, you'll appreciate the fact that *Persuasion* makes it relatively difficult to create aesthetic disasters—for instance, if you want to mix fonts on your slide, *Persuasion* does its level best to discourage you (essentially, if you want to do it, you'd better get familiar with layers and masking fast...).

If your presentations tend to depend more heavily on black-and-white handouts and overheads, particularly if they're mostly text-based, you might want to take a look at a less full-featured, less expensive presentation organizer, including early releases of *PowerPoint* or *More; Persuasion* may be more than you really need, even though you'd probably enjoy using it and produce impressive results quickly. If there's an upgrade path to color slides in your future, though, consider *Persuasion* seriously.

Persuasion can output your presentation to 35mm film recorder or a variety of laser and other printers, including color devices. Additionally, a host of service bureaus (the strategic alliances that make the product viable) stand ready to convert your *Persuasion* files into slides or color separations. Finally, the program will run your slide show directly on your Mac's screen; however, unless your presentation is quite simple and largely text-based, you should not consider this as anything but a preview function—even on a Mac II with five meg of RAM just for *Persuasion*, or an SE/30 with four, waiting for the screen to draw all

of a slide's elements is slow enough to be a real annoyance.

Also, forget *Persuasion* if you haven't got a hard disk, and a good-sized one at that—it's another one of those six-diskette monsters with its own installer. While it requires a minimum of a megabyte of RAM, it will quite cheerfully take as much memory as you care to give it, and gleefully create very large files (under MultiFinder on a four-meg machine, with a memory allocation of 800 K, it refused to open a 500 K presentation, so watch your file size).

While it is possible to take advantage of some of *Persuasion*'s functions on a monochrome system, you'll be able to see what you're doing more accurately on a color display.

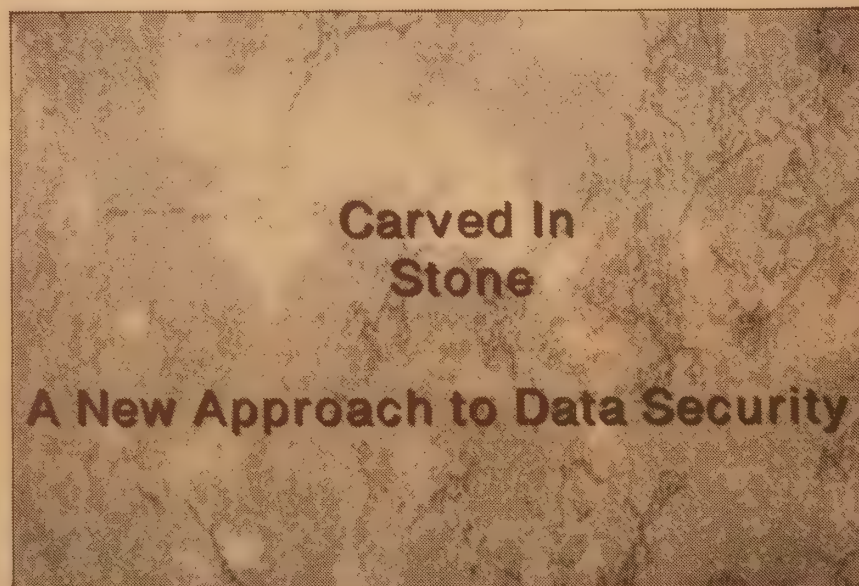
Using Persuasion—Simple Is Beautiful

The first step in creating your presentation is to outline your ideas in *Persuasion*'s Outline view. The outliner is delightfully intuitive (again, Aldus should license it to a few word processor vendors), and it's easy to rearrange your thoughts by simply moving them around on the screen. Each new topic header is assigned to its own slide as it's generated.

In the Slide view, you can choose from a variety of formatting templates, or create your own layout. Text is automatically arranged on its assigned slide, but you can change the way it looks by selecting and moving the blocks around. Likewise, you can import graphics in PICT or EPSF formats, resize them (proportionally or otherwise) by manipulating their handles, and easily move them to the desired location.

Clip art collections and the like can be a real time-saver here for backgrounds and graphic elements. *Persuasion* includes a generous allotment of clip art files, and more are available from other vendors—the marble background for the Carved In Stone presentation was one of those included with *Studio/8*, a spectacular painting and illustration program from Electronic Arts.

Once you've got your information on the proper slides, choose the Slide Sorter view, which allows you to see small versions of all your slides and move them into the desired order. Then run the slide show to double-check that everything works just exactly perfect, and output your presentation. Or save it to disk and send it off to the service bureau.



Once you've created text in the outliner view, *Persuasion* automatically arranges it on the slide.

Or modem it over.

A Surprise Or Two...

While *Persuasion* is nearly toaster-like in its ease of use, you may run into the occasional frustration as you discover the brave new world of color graphics on the Macintosh. Sometimes the transition from one file format to another produces some puzzling effects, which I encountered in creating the rose slides.

The original graphics file was downloaded from a software library in .GIF format. Both *Giffer* and *VisionLab* will convert .GIF to PICT; *VisionLab* also can convert it to EPSF.

Studio/8 opened the PICT file without difficulty and without loss of detail, retaining the custom color palette in the file. However, when I imported the PICT graphic from *Studio/8* into *Persuasion*, the colors reverted to the default Apple palette, with great loss of quality. Importing the same file directly from *VisionLab* in PICT and EPSF produced the same image. Other *Studio/8* files with custom palettes made the transition with colors intact. (*Persuasion* will let you customize its color palette according to your needs, but there seems to be no graceful way to save/export a custom palette from *Studio/8* and no efficient way to import existing custom palettes into *Persuasion*. Both products would be immeasurably enhanced by the addition of such a feature, to say nothing of CYMB color separation capability. *Persuasion*'s manual suggests that actual output will reflect the palette in the original file rather than the display on the monitor; however, in a medium like film where there's an inevitable delay between design and final output, something a bit closer to true WYSIWYG would be desirable.)

Conclusions

For the time being, making good use of *Persuasion* requires a significant investment in hardware and/or third-party services. Agencies that specialize in the creation of slide presentations would benefit by using it, as would large companies with frequent meetings. Academic departments might consider investing in a copy for lectures and class handouts.

Further, since the program and the equipment it requires are probably out of the economic reach of the occasional user, who might benefit enormously by access to such a tool, it would probably be a very

good idea for laser parlors and other Mac-by-the-hour establishments to install a copy on a color Mac workstation—few programs do such a good job of allowing the non-expert to do quality work quickly and easily. ■

Resources:

Persuasion
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Aldus Corporation
411 First Avenue South
Seattle, WA 98104
206/622-5500
Studio/8
List price \$495
Electronic Arts
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VisionLab and *Giffer* are available from many BBS systems and user groups, including BMUG.

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InBox Email For AppleTalk Networks

You may not know it, but there's a quiet race going on this spring—a race to put out network software that allows PCs and Macintoshes to communicate via electronic mail.

The contestants are *Dayna Mail* from Dayna Communications, *QuickMail* from CE Software, and *InBox* from TOPS. The first across the finish line and into my hands was *InBox*. Whether this is the best of the three and whether it's best for your network needs will be seen as the other two are released.

TOPS is actually offering two email products for the PC. The first, *InBox/PC*, is exclusively for DOS-only LANs. The second, *InBox Personal Connection for DOS*, allows your PC on a TOPS or AppleTalk network to trade email with the Macintoshes.

Since this space has never concerned itself with exclusivity, I'll concentrate on *InBox* for AppleTalk and TOPS networks.

Romancing The Node

You might think the *InBox* manual for the DOS connection was a romance novel if you skimmed through the chapter headings: "The Bare Essentials", "The Romance", "The Details (a Visual Glossary)" and my favorite, "So What Are You Waiting For?"

This enthusiasm, so unusual in documentation, serves to show the general euphoric feeling of those who have and use email systems.

Somewhat akin to those first word processing secretaries who urged their colleagues to buy *WordStar*, anyone who uses email on a regular basis becomes an automatic evangelist.

As mainframe computer gurus undoubtedly looked down on early *WordStar* users, today's telecommunicators will probably smile condescendingly at the email enthusiasts and go back to packet switching to Hong Kong.

Email, however, is one of those things that takes the excitement of computers and makes it obvious to the average person. And as we've seen before, the uninitiated make the best converts.



Copyright © 1989 by Robert Beauchamp. All rights reserved. Rob is a freelance journalist and documentation writer who resides in Minnesota and misses, sometimes, the lovely and crowded Bay Area.

InBox Offers A Hand To PCs

InBox, offered by THINK Technologies, has been around the Macintosh world for a while. Now offered through TOPS, *InBox* has a new update and the ability to allow DOS machines to tap into the electronic communications stream. *InBox's* features are many, and the DOS connection allows you to take advantage of most of them.

The *InBox* screen on the PC is functional rather than beautiful. You don't need a graphics card or monitor to use it.

InBox can be made memory-resident for those who use it frequently. On the Macintosh it is a desk accessory. The new Macintosh version even has a feature that allows it to operate when using memory-hogging programs.

On the PC side, however, you'll want to think carefully about making *InBox* memory-resident. As with any memory-resident program, there can be conflicts with other memory-resident programs and complications with high-end applications that take up a lot of memory.

The new Macintosh version is MultiFinder compatible, making it even more convenient. Since the PC version is not graphics based, there is no *Windows* version to allow you to take advantage of that environment's limited multi-tasking capabilities. While I have never met anyone who used the *Windows* environment exclusively, later on down the line it would be nice to be able to start *InBox* from a pull-down menu on the PC as well as on the Macintosh.

Email As A Connectivity Solution

One of *InBox's* important features is the ability to include material from other applications in your email.

You can do this in one of two ways. You can take a section of a file and put it directly in your memo. You can also enclose an entire document file along with your memo. The person receiving the file will then open it using the appropriate application.

To take a piece out of a document and place it directly in your memo on the PC, you simply run your application, call up the memory-resident *InBox*, highlight your selection and copy it into *InBox's* clipboard. On the Mac you would use the well-known Cut and Paste functions.

To send an entire file, you choose the enclosure function and pick the file you want to send.

For example, you can send a memo to Fred in the Art department asking for his professional opinion of your latest *MacPaint* doodlings. Fred can then

Email is one of those things that takes the excitement of computers and makes it apparent to the average person. And as we've seen before, the uninitiated make the best converts.

open up the *MacPaint* document on his machine, make some changes and send it back as an enclosure with his memo containing the "constructive" criticism.

However, *InBox* is not a connectivity tool in the same way as *LapLink* or *MacLink*. *InBox* does not provide any file translation capabilities between the DOS and Macintosh environments. You can transfer all the files you want with *InBox*, you just can't translate them into the format you may require.

If you're using programs like *PageMaker*, *Word*, *Excel*, or *Adobe Illustrator '88* in both environments, this won't be a problem. These applications provide their own translating capabilities. If not, you'll have to pick up a program like *The Curator* to do your translating for you.

InBox Requirements

Networking is more than just stringing a few computers together so they can talk to one another. So is email. There are certain requirements you must meet.

First, you need to have an existing AppleTalk or TOPS network.

Second, you need a Macintosh dedicated to act as the message center. One of *InBox's* new features is its ability to have the message center run in the background, freeing up the Mac for other tasks. These can't be very heavy, however. TOPS recommends a station where light word processing is done.

This does not, however, prevent you from using as your message center the same computer that's running your AppleShare file server. *InBox* also functions with other file and disk servers.

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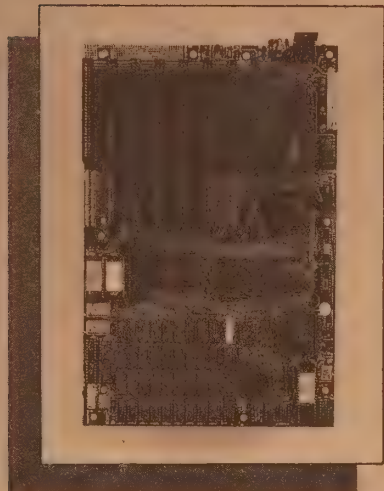
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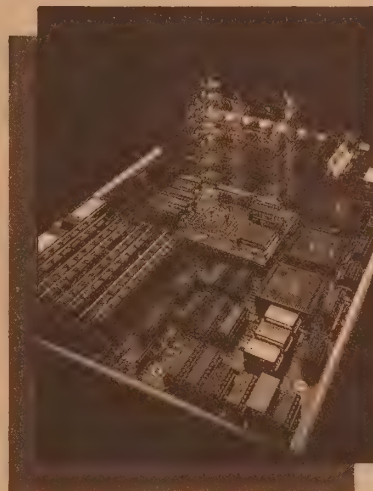
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InBox takes advantage of other advanced network features by supporting remote connections, multiple message centers, and, the monitoring of the system's activity.

Most importantly, however, you'll need a person committed to setting up and running the *InBox* system. Those with existing networks know the myriad of problems that can occur. While the day to day monitoring and administration of the system may not justify a new staff position, one person should be ultimately responsible for *InBox*'s operation.

Installing InBox

There are three distinct parts to *InBox* that need to be installed. The first is the message center. This is the heart through which communication is pumped. The second is the personal connections for each of the Macintoshes participating in the system. The third is the PC personal connections.

Setting up the message center and its accompanying administrator applications on your Macintosh isn't difficult. It just takes some time, as there is a lot of detailed information to be absorbed from the manuals. Unlike many products, *InBox* does require you to be careful to read *all* the printed material that accompanies the package. All of the update information is in a separate pamphlet. If you start by reading the regular manual, you will get outdated and incorrect information.

Setting up the Macintosh personal connections is easy because most of the work is done at the mes-

sage center. The pamphlet provided for each of the individual users is a simply formatted, visually oriented piece. It makes learning *InBox*'s features from a user's perspective very easy.

Setting up the PC personal connections, as you might expect, is a whole other story. Before you can use *InBox* on the PC you have to do some editing of your AUTOEXEC.BAT file. If you want to install it as a RAM resident program you have to do some *serious* editing of your AUTOEXEC.BAT file. *InBox*'s documentation, however, does an excellent job of holding your hand through this process, which for some is the emotional equivalent of performing surgery on yourself.

If you wish to automatically modify your AUTOEXEC.BAT file, the documentation states, you can use the SETUP program provided on the *InBox* disk. That is, however, *if* it is provided. I didn't get one on my disk so I can't report as to its functionality. I'll attribute this to the rush to get the *InBox* PC connection out. If you don't get one on your disk, TOPS will be happy to supply you with one.

In any event you may not need it. If you can't use a memory-resident program due to conflicts, or you don't like *anyone* doing *anything* to your AUTOEXEC.BAT file *automatically*, you'll just want to modify it yourself.

Conclusion

I've been hearing a lot of frustration on the part of those who've installed AppleTalk networks and are disappointed in one way or another. Mostly I think this comes from expecting too much from the network.

A network doesn't make your file server a main-

A network doesn't make your file server a mainframe. Nor does it miraculously transform the Macs and PCs on the network into Sun and Apollo workstations. AppleTalk networks, like TOPS, are a good way for a number of computers to share peripherals and use electronic mail.

frame. Nor does it miraculously transform the Macs and PCs on the network into Sun and Apollo workstations. AppleTalk networks, like TOPS, are a good way for a number of computers to share peripherals, such as laser printers, transfer files between computers and, with products like *InBox*, use electronic mail.

Before installing a network, make sure you know what your needs are. If an AppleTalk network can satisfy your needs, make sure you have someone who can become proficient at running the network. If you do these two things you'll avoid many of the frustrations associated with networking. ■

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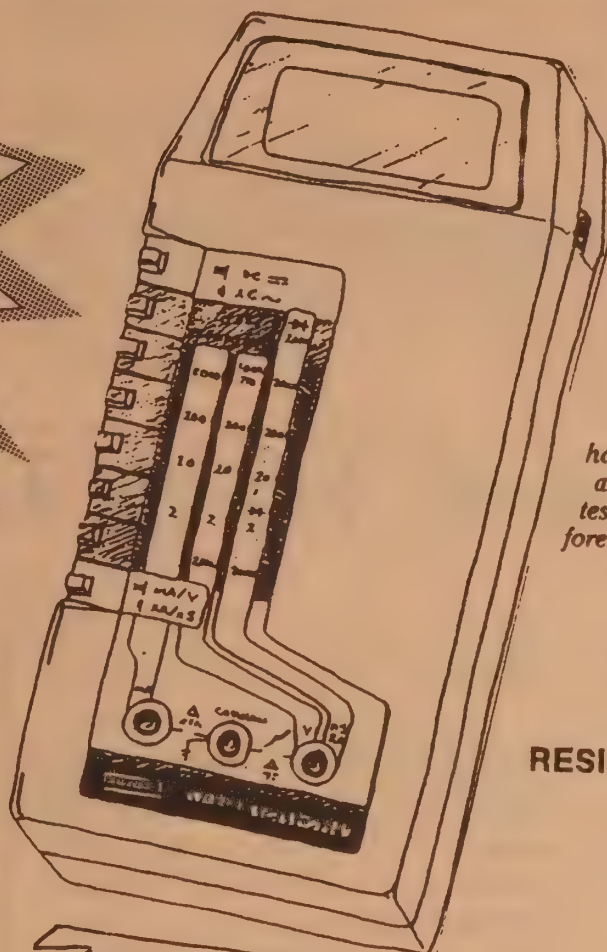
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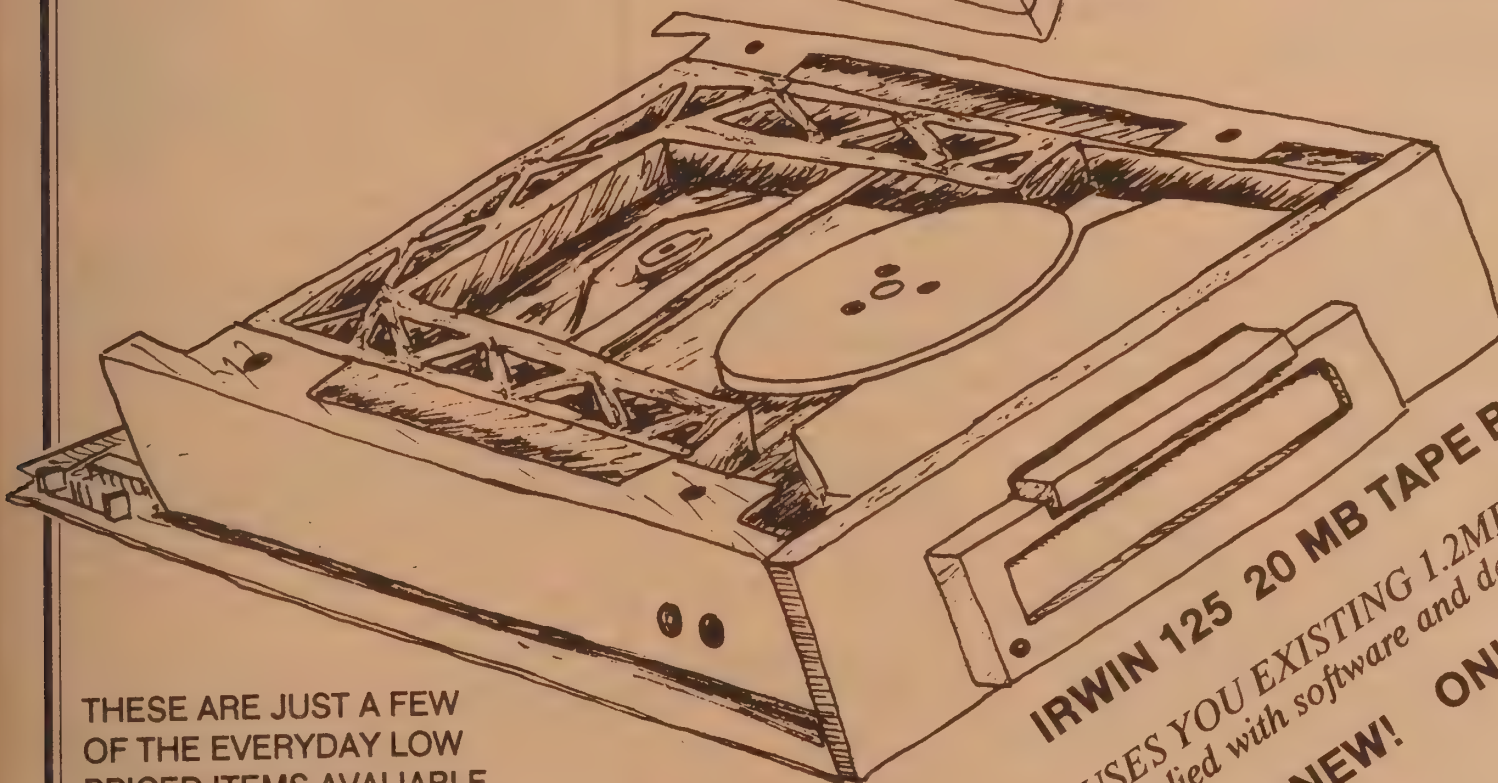
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It's A Hard Life

Welcome to the BMUG column. It's a hard month at BMUG—hard disks, hardware, and hard to live with. This is hardly the time to turn back, 'cause there's tips and flips ahead.

The Irregular Season

The weekly BMUG meeting usually includes an opening day event for some software program and its developers. The peanut gallery waits for a botched infield play, so they can wave their Macintosh Technical notes and Human Interface Guidelines. Sometimes the problems are a little harder and unusual.

A while ago, a *HyperCard* sound stack still in development was being shown. The author of the stack couldn't get the speaker to work—the Mac II was silent. Everyone in the audience shouted out possible remedies, from HyperTalk programming to Control Panel settings, but nothing worked.

Finally, Phil Reese, BMUG's BBS manager, shouts, "I know what it is!" While "cleaning" the machine the night before, he had forgotten to reconnect the speaker. Not every problem is software in origin, so it pays to check the material side of things.

No Mac's Land

The 14th West Coast Computer Faire was held in the middle of March. For Macintosh people it might as well have been called the *Waste Coast Fair*. There were plenty of PC clones and Atari booths, but only BMUG was in the trenches for the Mac.

The BMUG booth was visited by folks still flying high from the extravagant January Macworld Expo. Some had traveled from Los Angeles, Fresno, and Sacramento, hoping for a cheap hard disk or RAM upgrade. The cupboard was bare.

The Mac was well represented in many of the conferences. The *HyperCard* demonstrations were well attended and still a mystery to the uninitiated. A combative PC user sneered at Amanda Goode-nough, the talented hyper-author of *AmandaStories*, saying, "Do you mean **all** *HyperCard* is good for is creating your own world?" Stunned, Amanda replied, "That's what I do," wondering why anyone would want anything else!



Copyright © 1989 by David Morgenstern. David Morgenstern is a Bay Area "MacNurturer" and BMUG member. David is MORGENSTERN on MacNet and himself at (415) 641-7352.

BMUG Virus SIG Alert

- Several Trojan Horses are making the rounds of bulletin boards around the country. A Trojan Horse is a program that masquerades as something harmless and performs some covert action, usually destructive. The effects may be noticed immediately, when the program erases your hard disk, or later with some insidious result. Unlike a computer virus, a Trojan Horse doesn't replicate itself — it's a one-shot job.

If you see a copy of *Stuffit 2.0* or *AntiToxin 2.0* floating around, throw them away immediately!

Stuffit is a file compaction program by Raymond Lau, a young and extraordinary Macintosh programmer. The current version is 1.5.1 (BMUG *Telecom 1* disk) and Ray says there never will be a 2.0 version.

AntiToxin is a virus combating program by Mainstay of Agoura Hills, California. It is a commercial virus-checking program and not shareware. The current version is 1.1.

Forget those Lotus-eating, productivity bums, Amanda. Inigo, the hyper-cat, will take care of them!

Jazzmine Sings The Bluze

The BMUG meeting has buzzed for months about the corporate soap opera happening at Jasmine Technologies, Inc. of San Francisco. Executives are locked out of the company offices and they sue. President counter-sues claiming a corporate conspiracy. Clouds of suspicion cover two big Macintosh hardware players and their products. Move over *Dallas* and *Falcon Crest*.

Jasmine blew the lid off the Macintosh hard disk market a few years ago with relatively low priced quality products. One or more of Jasmine's drives

has been rated a *Choice Product* in the last four BMUG Newsletters.

Many months ago, Steve Costa, BMUG's technical director, criticized some hard disks that used Rodime Inc. (Boca Raton, FL, and Glasgow, Scotland) drive mechanisms, including Jasmine's. The guts of hard disks and most other computer equipment are manufactured by a few big companies, and Rodime is one of them.

Steve was called all kinds of nasty names and was public enemy number one at Jasmine (how soon they forget). People on the BMUG and Jasmine bulletin boards swore Steve had a vendetta against Jasmine, since everyone knew that "Jasmine drives, old and new, are close to being infallible." The drives float on water, too?

Dennis Chang, President of Jasmine, now confirms Steve's judgement with his 25-million-buck lawsuit against Rodime. He claims that some ex-Jasmine executives and Rodime conspired to hurt Jasmine's sales and reputation by supplying bad disks. The executives hoped to force Chang out and take over the company. Jasmine says, "Many of the disk drives supplied by Rodime were defective and this disrupted operations, delayed shipments and damaged [our] reputation."

Users of Jasmine/Rodime drives are left walking a tightrope without a safety net. The lawsuit makes it pretty unlikely that Rodime will be sending Jasmine replacement parts for bad drives soon. Pray your drive doesn't flake out until the mess is cleared up. Jasmine's technical support, formerly a well-run operation (although overworked), has lost many employees and is a big uncertainty. (*With regard to the status of Rodime drives, a call to Jasmine at press time revealed that the company is fully aware of the problem and working to address this. According to Patrick Silvagnia at Jasmine, the company stands behind its two-year warranty on all its drives. Jasmine has contracted with outside repair houses to service Rodime drives as necessary. As for the owners of the Rodime 45 and 70 Mb disks, which have been languishing in the service department waiting for back-ordered parts, they're being given the option of having the existing drive repaired, or swapping it at no charge for Quantum-manufactured 40 and 80 Mb drives. —eds.*)

With all these lawsuits, where will Jasmine get the cash to buy needed drives from other manufacturers? More importantly—will Jasmine have the extra \$100,000 to throw around for its annual party at San Francisco Macworld Expo time? Get ready for Cheetos and bean dip on paper plates.

There's some good news and bad news in this



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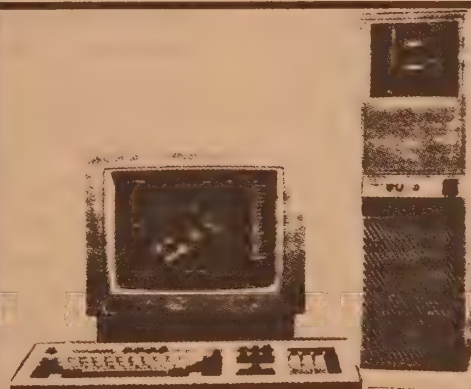
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mess for some "lucky" users. Some of the Jasmine Direct Drive 20 Mb drives used drive mechanisms manufactured by Miniscribe. These drives are more reliable than the Rodime disks. You don't need to open the case to check the manufacturer, however, because the Miniscribe sounds like a washing machine. If it's really loud, it's a Miniscribe. But will it do permanent press?

The Hard Facts

Your hard disk is an expensive and important part of your computing environment. Although you can't buy it sheepskin seat-covers, or a fancy leather car-bra, there are some things you can do for your special something. Here are some tips to keep your hard disk, and the data stored there, happy.

- **Disks should be formatted cold.** Some disks are shipped preformatted, while others have never been run (more common on the PC). The new 44 Mb removable media drives feature hard disks in plastic cases that pop in and out of the drive.

When you turn the hard disk on, it is cold. As the drive operates it gets hot and the disk, a metal plate, expands. Most hard disks have fans to keep them cool, but they get hot anyway. The hard disk stores a lot of data in a very small space, and the data will move with the heat expansion. Sometimes the drive can't find the place where it put your data when the disk was cooler. The same process can happen in reverse—hot data can't be found in the cold.

This problem is most critical when the drive is started. When the disk is formatted it finds the sectors that are bad, so it won't put your data there. It also learns how to operate with your Macintosh. The software that performs these tasks is called the *SCSI driver*. If the disk is formatted hot, the driver software may not be available when the disk cools down. The drive won't work until it gets warm again.

To avoid this problem, first run the disk several hours until it gets hot (in computer lingo, *operational temperature*), and then turn off the drive and let the disk cool off, perhaps overnight. The next morning, start the drive and format it.

The only time when you might want to format hot would be for a drive that will be left on all day, every day. This might be a business network server, or a computer bulletin board hard disk.

- **All disks should be formatted in the position in which they will operate.** If your hard disk will be on its side, whether inside a Mac, or outside, it should be formatted in that position. Don't format a disk flat and use it sideways. Gravity does affect drives in small ways, and some older ones were not recommended for sideways use. This rule applies to floppy disks too.

- **Beware of temperature changes in cartridge media.** Most hard disks are closed up tight, but not the removable units. They are open to the air and can be affected by sudden changes in temperature and humidity.

After a long trip in an air-conditioned car, bus or plane, wait before thrusting your cartridge in a hot drive. Let the disk come to room temperature, or it will start to perform the old science class project on condensation! Running the drive with moisture on its surface is not healthy for your data.

Shareware Spotlight

As the Macintosh virus problem gets worse, the marketplace hurries to supply us with countermeasures. The commercial anti-virus solutions are not cheap and usually come in around \$100 list. Site licenses can run into the thousands of bucks. But don't fret—volunteerism is not dead!

Disinfectant, an anti-virus detection and eradication program, is an international cooperative effort by a group of Internet programmers. John Norstad from Northwestern University led the group, with help from hackers in Amsterdam, Zurich, and the U.S. (including BMUG's Leonard Rosenthol of Software Ventures).

This program is very easy to use and understand. It includes a long help file that describes the different viruses and recommends prevention strategies. *Disinfectant* only checks quickly, shows each folder/file hierarchy as it is checked, and repairs files faster than any other software available.

Disinfectant is shareware and is on the latest version of BMUG's *Utility 8* disk. ■

Upcoming Events

May 18: **Finals Week.** Check the Announcement Line for meeting location.

May 25: Fox Software *FoxBase+*, Brøderbund *TypeStyler* and *DrawingTable*.

June 1: *Stella Stack* (simulation software).

June 8: Layered *At One*, Priam hard drives.

June 15: Chris Crawford and Monogram *Business Sense*.

June 22: Electronic Arts *Studio 8*.

The hard disk stores a lot of data in a very small space, and the data will move with the heat expansion. Sometimes the drive can't find the place where it put your data when the disk was cooler. The same process can happen in reverse—hot data can't be found in the cold.

What Is BMUG?

BMUG is a non-profit educational corporation, promoting the exchange of information. Like any growing organization, it is many different things to its 6,500+ international membership. BMUG, Inc. is a computer user group located in Berkeley, California. The group specializes in computers using a graphical interface. For a while that meant the Apple Macintosh but now includes other makes, models and operating systems, including the NeXT best thing. BMUG supports many Special Interest Groups (SIGs), a eight-line Bulletin Board System (BBS), free HelpLine, software library, weekly meetings, and much more. BMUG also puts out a semi-annual 400+ page book that we call our "newsletter."

Our motto continues to be: *We're in the business of giving away information.*

Come and join in the dialogue at the BMUG main meeting every Thursday evening, 6:00 to 9:00 (or whenever we finish), in the Physical Sciences Lecture Hall on the U. C. campus.

The BMUG HelpLine, (415) 849-HELP, and our fax number, (415) 849-9026, provide technical assistance and telephonic hand-holding during business hours (10:00 a.m. - 5:30 p.m.). If your question can't be answered on the spot, we try get you in touch with someone that can help. Of course, not every problem can have a happy ending—but we try.

BMUG has one of the most up-to-date, comprehensive software libraries around with 350+ double-sided disks filled with the latest versions of public domain or shareware programs and HyperCard stacks. New disks unveiled almost every week at the Thursday general meeting. BMUG also brings you the *PD ROM™*, our entire library and more on CD-ROM.

Our BBS offers many of the latest versions of files in our software library as well as news, private mail, rumors, etc. The BMUG BBS is part of the worldwide EchoMac Network on FIDOnet (161/444); by calling a local FIDOnet BBS in your area, you would then be able to get in touch with us wherever you are as well as send mail to users everywhere! BMUG is now a part of the international USENET network (apple!bmug!user.name@sun.com). With our multi-line capability you are now be able to have access to BMUG almost 24 hours a day. It's easy to use, fun, and a great resource.

To get some further information about BMUG please write to: BMUG, 1442A Walnut Street #62, Berkeley, CA 94709. If you prefer to phone our business office call (415) 549-BMUG.

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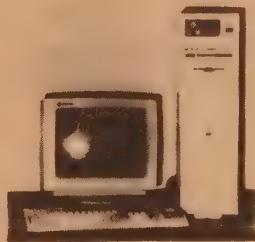
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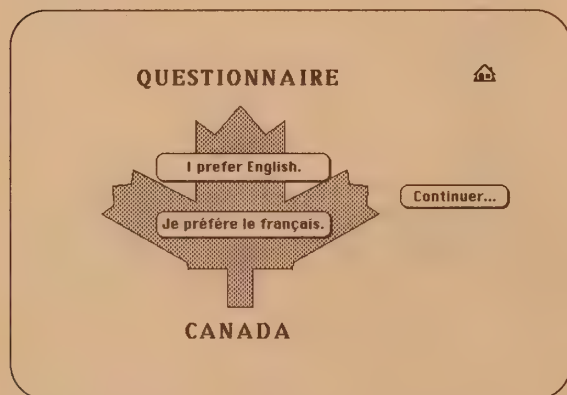
International Stacks

Scripts For A Questionnaire In Many Languages

One of *HyperCard*'s virtues is that stacks can be self-modifying. You can write stacks that will change for different situations. Scripts that allow this kind of adaptation are simple to write, and they permit you to address many audiences with one stack.

Imagine that our company is hired by the California Tourist Office. They want software to poll Canadians in Ontario and Québec about their attitudes toward California. We must make a questionnaire that will work in English or French.

Most Canadians are monolingual, and many "Anglophones" and "Francophones" do not like to be confronted with the other language. Questionnaires must print the questions in both English and French, or use horrid linguistic hybrids like "Questionnaire Canada." We could write two different stacks, one in English and one in French, but this is wasteful. Surely we can do better with *HyperCard*.



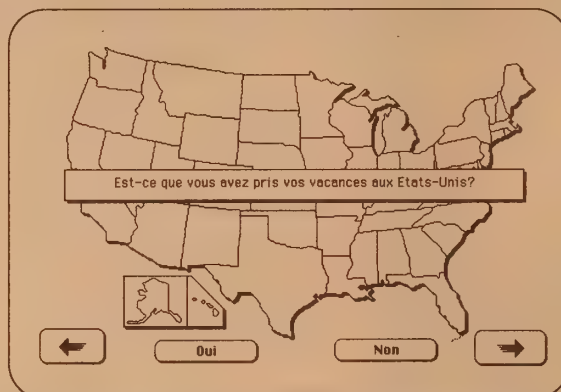
The stack lets the user choose the language in which the questionnaire will be done. The button on the right says "Continuer" if French is chosen, and "To Continue" if English is selected.

Setting Up The Bilingual Questionnaire

Most of our questionnaire will be maps, with questions about the areas shown. We want the user to



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A French-speaking respondent sees the questions in French, and answers in French with "Oui" and "Non" buttons.

respond to each question with a yes or no. We want each user to be able to read and respond in the language they prefer, without wasting the Mac's memory (and our time) by making two stacks identical in everything except the language.

We begin by asking users which language they would rather use. The first card of the stack has a button for the English speaker and one for the French. The choice sets a global variable, "WhichSpeech", which is used throughout the stack. (We would use "Language" as the global variable, but the property "Language" is already in use by *HyperCard*. It indicates the language in which scripts are written.) Here is the script for the button "Je préfère le français."

```
on mouseUp
    Global WhichSpeech
    put "le français" into WhichSpeech
    set the Name of card button 3 to "Continuer..."
end mouseUp
```

Here is the equivalent script for the button "I prefer English."

```
on mouseUp
    Global WhichSpeech
    put "English" into WhichSpeech
    set the Name of card button 3 to "To continue..."
end mouseUp
```

The script puts the name of the chosen language into WhichSpeech. It also begins to customize the stack. If the user chose English, the button on the right side of the card says "To continue..." If the choice was French, the button says "Continuer..."

In setting up our bilingual questionnaire, we want each user to be able to read and respond in the language they prefer, without wasting the Mac's memory (and our time) by making two stacks that are identical in everything except the language.

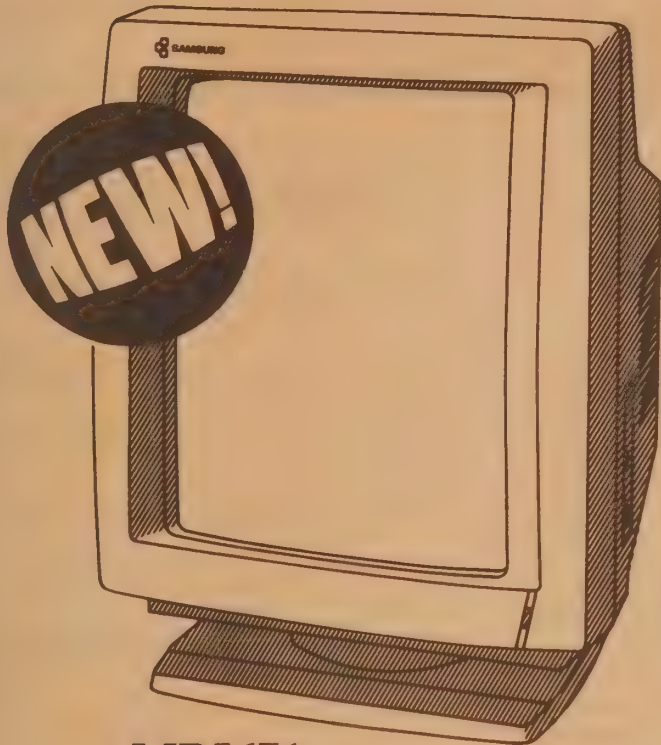
Each card can have a script that lives with the card, and is triggered when the card is opened. Our card script sets the button names to be "Oui" and "Non", or "Yes" and "No", as is appropriate; and it puts the question into the "Question" field in the user's language:

```
on openCard
    global WhichSpeech
    if whichSpeech = "le français" then
        set the name of background button 3 to "Oui"
        set the name of background button 4 to "Non"
        put "Avez-vous passé des vacances aux Etats-Unis?" into q
    else
        set the name of background button 3 to "Yes"
        set the name of background button 4 to "No"
        put "Have you vacationed in the United States?"
    into q
    end if
    put q into card field "question"
end openCard
```




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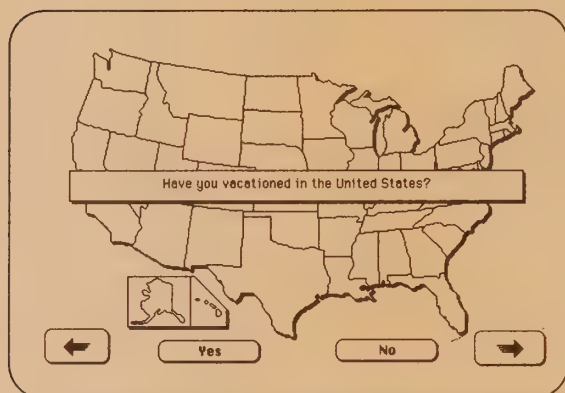
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If you want to write a script that uses a foreign language, get help from a native speaker. They can prevent that sad moment when your client rolls on the floor guffawing.



An "Anglophone" gets the same question in English, and presses "Yes" or "No".

The same design could be used for any languages that use the Latin alphabet. We can offer the California Tourist Office a stack for the European market with a dozen languages by simply extending the scripts that we have already written.

This stack shows how *HyperCard*'s hierarchical organization can save effort. We could have written a complicated script that notified every button and field in the stack of the chosen language. Instead we let each card set itself up and modify its own buttons and fields. The card script responds to the "openCard" message sent to each card to make it open. Cards never used do not have to be modified, and the user does not have to wait through a lengthy initial setup.

The scripts also show the usefulness of a single global variable. The name of the preferred language becomes available to every object in the environment. Notice that the variable "WhichSpeech" must be declared global not only by the script that first creates it, but also by every other script that uses it. *HyperCard* was created as an object-oriented system. Object-oriented systems keep information private within the objects, and communicate by sending messages rather than by using shared data. The assumption is that all variables are local unless declared otherwise. *HyperCard* has modified the object scheme enough to let you use global variables when they are particularly useful.

By the way—if you want to write a script that uses a foreign language, get help from a native speaker. They can prevent that sad moment when your client rolls on the floor guffawing. North American French has different idioms from the French of Europe. *Merci au Consulat du Canada.*

The map of the US is from *HyperAtlas*, reviewed

HyperCard's hierarchical organization can save effort. We could have written a complicated script that notified every button and field in the stack of the chosen language. Instead we let each card set itself up and modify its own buttons and fields.

here several months ago. If you are going to do cartographic work in *HyperCard*, you should get it for its US, state, and world maps. The time they save will pay for the product. ■

HyperAtlas

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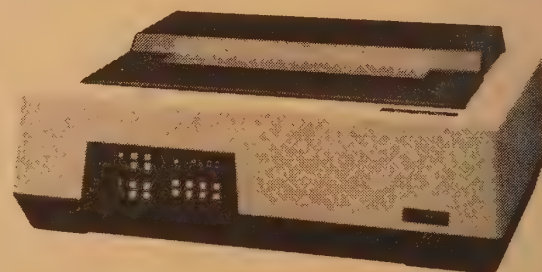
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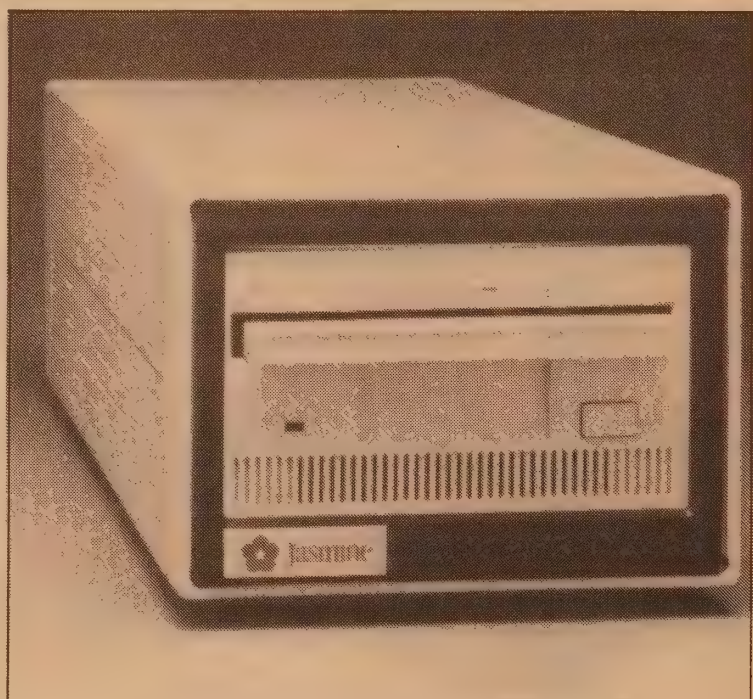
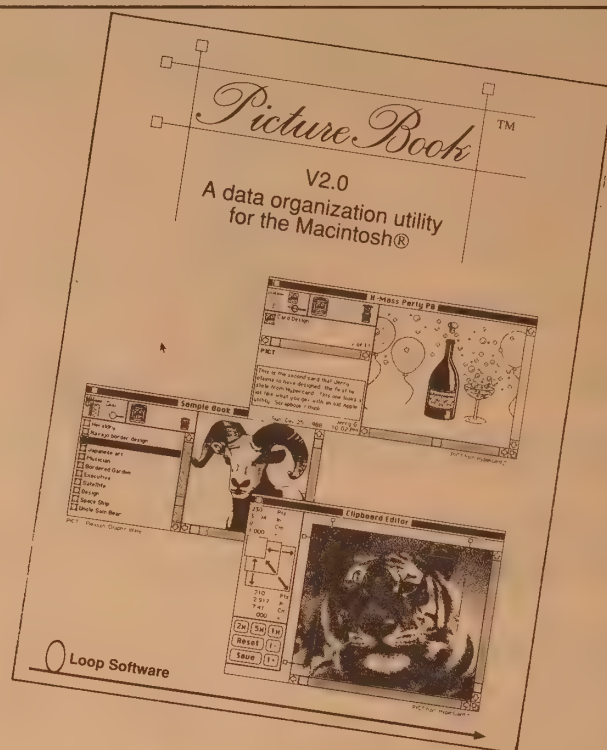
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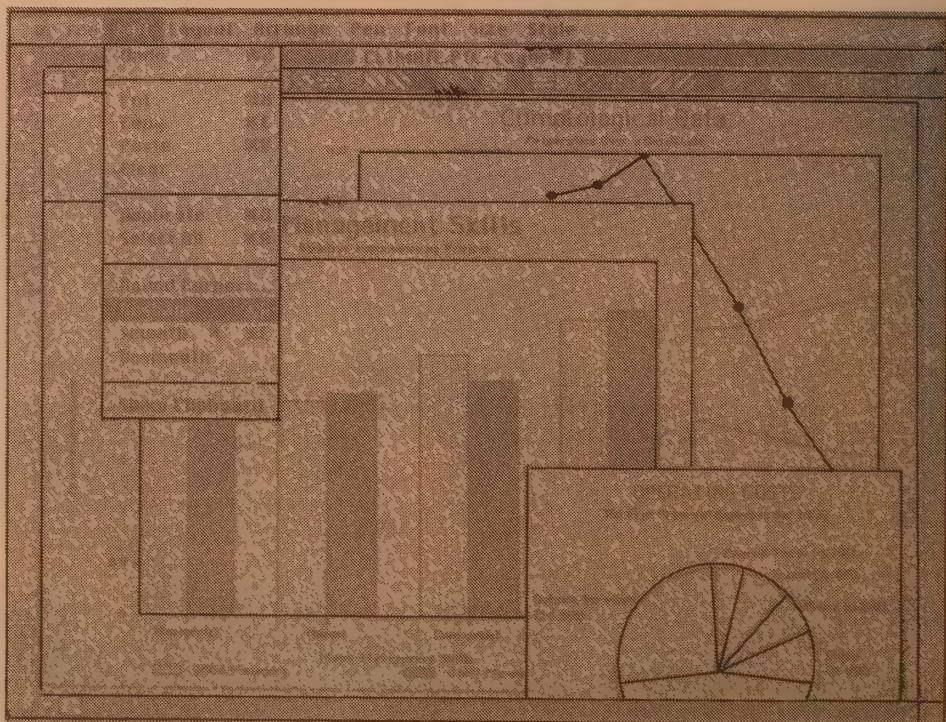


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Jasmine Technologies has recently introduced a removable, erasable optical disk drive that can store up to 600 Mb of data. The Jasmine DirectOptical drive features a 5.25" removable cartridge and full read-write capability. The DirectOptical media are enclosed in a self-opening cartridge much like 3.5" floppies, and the drive's sing laser beam reads, writes, or erases data from the disk spinning at 1800 rpm. Based on a Ricoh drive mechanism, the drive's average seek time is 50 ms, and the data transfer rate at the SCSI is 1.2 ms. The unit provides extensive error correction and utilizes 256 K of buffer memory for optimum transfer speeds. Jasmine expects the drive to be useful for applications including storage system backup, CAD/CAM, graphics, and music composition, which are typically large, contiguous files. (\$4995) Audrey Leeds, Jasmine Technologies, Inc., 1740 Army St., San Francisco, CA 94124. (415)282-1111.

PICTurePICTure Brings 1-2-3 Graphs Into The Mac Environment

PICTurePICTure is a new file translation utility from C. Carlson that converts *Lotus 1-2-3* PIC graph files into fully editable PICT files. *PICTurePICTure* gives the users of one of the world's most powerful spreadsheet applications access to the superior graphics capabilities of the Macintosh. A 1-2-3 graph becomes a PICT file that can be edited with *MacDraw*, *MacDraw II*, *SuperPaint*, *PixelPaint*, and similar object-oriented graphics programs. The application is also compatible with many presentation graphics programs, and word processing and desktop publishing applications as well. (\$99.95) Carl A. Carlson, PO 3669, Tucson, AZ 85722. (602)628-7389.



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BUSINESS COMPUTING

BY SUZANNA MUSICK

The Light At The End Of The Tunnel: Case Studies In Automation

Over the last few months I have presented several articles that discussed how to automate complex business functions (e.g., accounting). We have examined such items as defining your requirements, evaluating and selecting the appropriate software program, and getting it (and you) operating properly.

Last month I talked about selecting a consultant to help guide you through this maze. This month I thought we would get away from all this theory and talk about reality.

If you are in the midst of a software selection or conversion, you know that it is possible at times to lose sight of the light at the end of the tunnel. (Yes, there is a light and, no, it is not an oncoming train.) Some real life stories might help "illuminate" the benefits that go along with your endeavors.

Case 1—Law Firm Merger

Once upon a time (no, this is a true story), two local law firms, one very old and established, the other young and dynamic, decided to merge. In addition to determining their physical location, which of the two telephone systems to keep and expand, how many copiers would be needed, and a slew of other matters, someone had to figure out a way to merge the two firms' computer systems. Of course, just like the telephone systems, they were not using the same, or even similar, hardware and software.

A number of good things came out of this transition for the new firm.

The old firm had been using a dedicated word processing system that was on its last legs. Not only were they at risk due to the obsolescence of their system, but they could not merely call for temporary help, and expect the agency to have someone who could operate their system.

The young firm was using PCs. The old dedicated word processors were replaced with PCs company-wide, and everyone is using *WordPerfect*. Some anxiety was felt about learning a new program, so in-house classes were held, using examples from the firm's own work that decreased learning time considerably.

One additional bonus: to avoid having to re-type all their data (wills, trusts, contracts, etc.), we were

able to get their old data converted from their seven-inch disks to a format readable by *WordPerfect*.

With the word processing out of the way, we turned our attention to the accounting process. This is where the older firm had the edge. A couple of years previously, they had converted to a PC-based legal time and billing program. They were then re-entering the summary totals into another software program for the general accounting (general ledger, accounts payable and accounts receivable).

The young firm's volume had yet to demand an integrated program. They had created some *Lotus* spreadsheets for tracking expenses, and manually entered data onto input sheets for billing and financial statements, which were sent to a service bureau for processing.

The merger meant an overall increase in business, so it made sense to build their accounting system around their main function—providing time and expertise, and billing for that time. The *LegalMaster* time and billing program had more than enough capacity for the firm's combined volume.

The remaining problem was the general accounting software. Transferring summary entries was no longer going to suffice, and creating an automatic link from the time and billing program to the general accounting program would be too costly and time-consuming. Upon talking with *LegalMaster's* vendor, we learned that a "connection" between the program and several general accounting programs already existed in the software's current version.

Solomon III was selected from the available options because of its powerful general ledger reporting and other features. The conversion went smoothly, even in the midst of "merger mania." If you recall, in the conversion article I talked about the importance of breaking the project down into phases to make it manageable. This is a good example of that process.

First we converted the young firm's client and case data to the *LegalMaster* program while keeping everything else in place. Immediately we began processing daily time sheets and generating billing reports. Now when invoices are created or cash is received, it is passed directly from *LegalMaster* to *Solomon* without any re-keying.

During this conversion, the Controller and I worked on a new chart of accounts and entered it into *Solomon*. One of our staff consultants worked on extracting the vendor information out of the old firm's accounts payable program and importing it into *Solomon*. This saved the firm considerable time, since it wasn't necessary to manually enter that information into the new program. When that was accomplished we added the young firm's ven-

If you take a systematic approach to the process, you will be rewarded with the myriad of benefits automation provides. It doesn't matter if you are a one-person operation or a 100,000-person corporation, there are systems available to help you be more productive.

dors, set a cut-off date for both the old and manual system, and started processing invoices.

Finally, everything came together in the General Ledger, and the client is living busily ever after.

Case 2—Rapidly Growing Wholesaler/Retailer

This client has two distribution companies and 11 retail stores at this writing, and is continuing to expand. They cater to the tourist industry, and their extensive inventory turns over quickly. They sell everything from baubles to very expensive gems, and most items are imported from the Pacific Rim. Cash flow management is absolutely essential, as growth is being funded from profits.

When we first met them, their multiuser accounting software vendor had been sold and there was only one consultant in the Bay Area who knew their program. To make matters worse, they were having problems with the software and couldn't get help from the vendor or consultant. In the end, they had given up on the automated system, and had resorted to converting back to a manual process.

They knew that to support their growth plans they had to select another accounting program, but they were understandably gun-shy. At the same time,



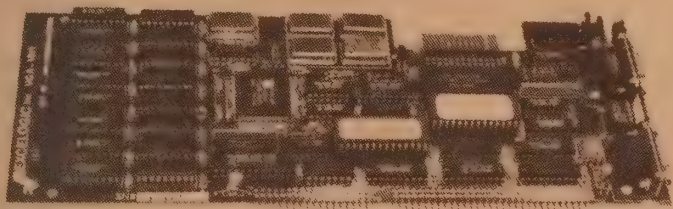
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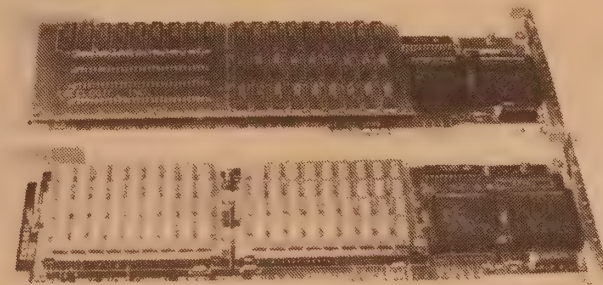
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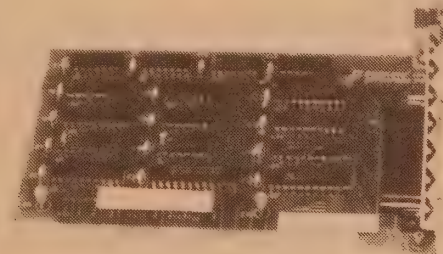
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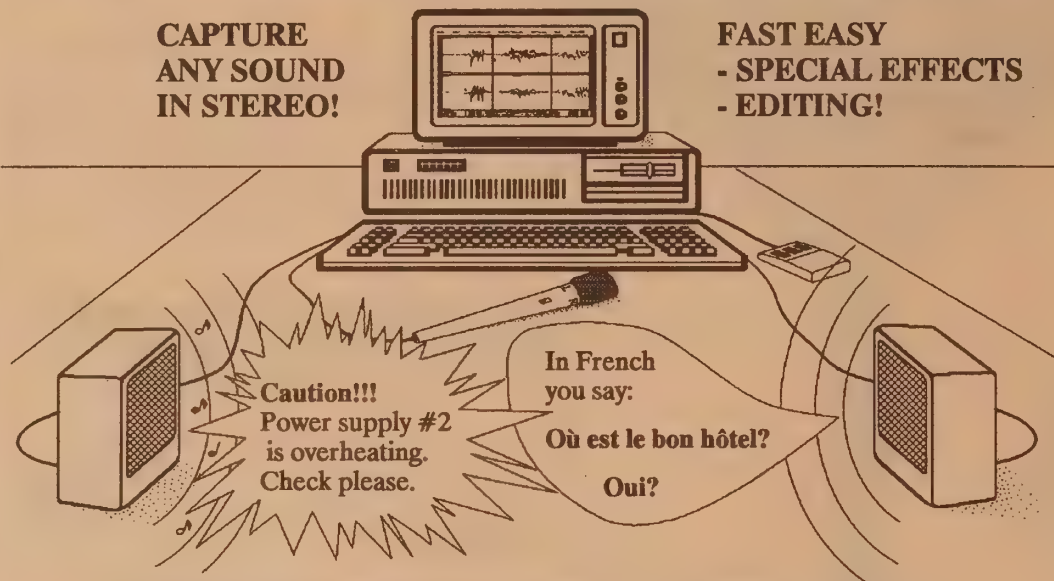
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they knew that every day they put off selecting a new program caused delays in processing customer orders and tracking inventory.

They wanted to be sure that the new program they selected was going to satisfy their needs and was supported by a number of consultants. To this we added the criterion, based on their projections: plenty of room to grow.

This has been the classic case study mirroring the previous articles' instructions and advice. First we interviewed a number of people involved with the system, from management to data-entry clerks. Input and output documents were reviewed to see what information was needed, and in what format. We examined their financial reports and discussed additional management reports they were not currently receiving, but felt would be useful.

The company had a significant investment in 286- and 386-based PCs and the local area network. We wanted to utilize this equipment if possible. Research and evaluation led us to recommend *Platinum* accounting software. Not only are the inventory, order entry, purchase order, and other modules functionally strong, but the system has a powerful report writer and other software tools that make it work well in the client's environment.

Another important feature of the system was its speed—the client wanted it to respond quickly when there were several people on the system at the same time. When checking *Platinum's* references, we asked about speed performance and received exceptional responses. We even talked with one company that had converted from a mainframe system to *Platinum* because of the improved access speed. (For you techies out there: *Platinum* uses Btrieve for file indexing, which is one of the reasons it responds so well.)

Again, we broke down the conversion process in pieces. First we selected the primary distribution company, the idea being that because it was a new program we would complete the entire cycle for one company, learn from our inevitable mistakes, and then move on to converting the remaining companies.

Numbering schemes for the chart of accounts, vendor, and customer numbers were all established (we used existing inventory numbers). Once again we were able to extract data from the old accounting program. We brought it into a spreadsheet, where it was modified for automatic entry into *Platinum*.

The conversion began with Accounts Payable, Purchase Order and Inventory, adding Order Entry, Accounts Receivable, and General Ledger as we progressed. Other than a couple of software glitches in the inventory transfer from one warehouse to another, the installation has gone smoothly.

One important aspect of this conversion has been the people. They are accountants, they have had experience with another system, and they dislike having to do things manually. They worked hard to complete the tasks assigned to them between training sessions, and they learned the new program quickly. Their system is currently up to 12 users and is expected to have as many as 20 by the end of the year. All accounting information is being processed on the computer—orders are being entered, inventory adjusted, invoices printed, and the company is taking off.

Case 3—Job Costing For A Construction Company

This company was doing everything manually, except for a few *Lotus* spreadsheets and a service

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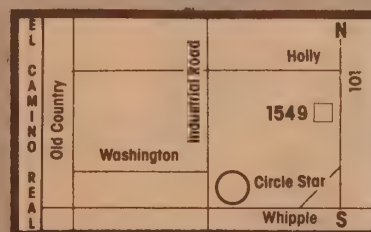
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The clients wanted to be sure that the new program was going to satisfy their needs and was supported by a number of consultants.

bureau that processed their payroll. They were involved in many state and local projects that required filling out reams of paperwork for certification. In addition, they were a union shop, employing four or more trades on any one job.

Worker's compensation insurance alone was a major (time-consuming) headache. With all the manual paperwork, they had little time to do any job costing.

Except for the Controller, none of the users had significant computer experience. For this reason we knew the system had to be easy to understand and operate. It had to provide them with what they needed, but not overwhelm them with a lot of cryptic computer operations or jargon.

To determine the most suitable software program, we surveyed a number of contractors who provided similar construction services (i.e., our client's). To that survey we added a number of programs we were familiar with that were suitable candidates. In all, we looked at more than a dozen programs. Those were culled down to five software vendors from whom we requested detailed proposals. The evaluation was completed using the software requirements as specified in the needs analysis.

Through the evaluation process we were able to eliminate four of the programs due to weaknesses. These included a lack of the necessary features and/or reports; systems that were high-priced but did not fulfill some of the requirements the lower-priced systems did; and systems not fully integrated or easy to use.

Software Shop was the program we selected and installed. It fulfilled the majority of their requirements (it was specifically designed for the construction industry), was one of the easiest programs to use and understand, and was fully integrated.

Equipment was purchased and a Novell network was installed to operate the software. Network training was provided and the conversion process began. I won't bore you with the details, because by now you should know that the project was broken down into manageable tasks and completed over a period of time.

The company has been successfully using the system for over a year; it provides them with their payroll as well as the required union and worker's compensation reports, job costing, and financial reporting.

Conclusion: Let The Light Shine

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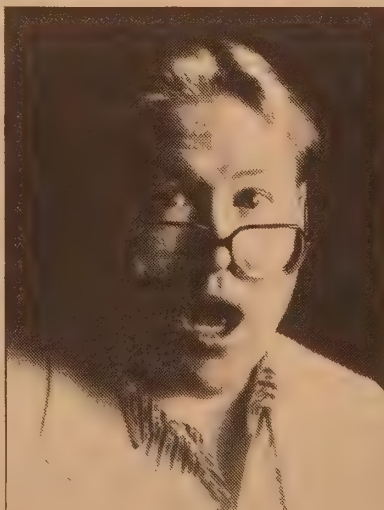
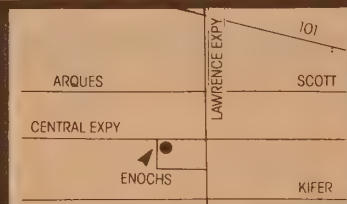
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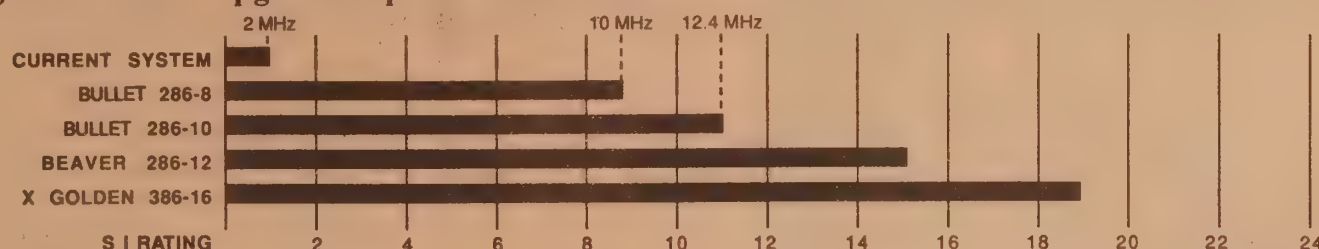
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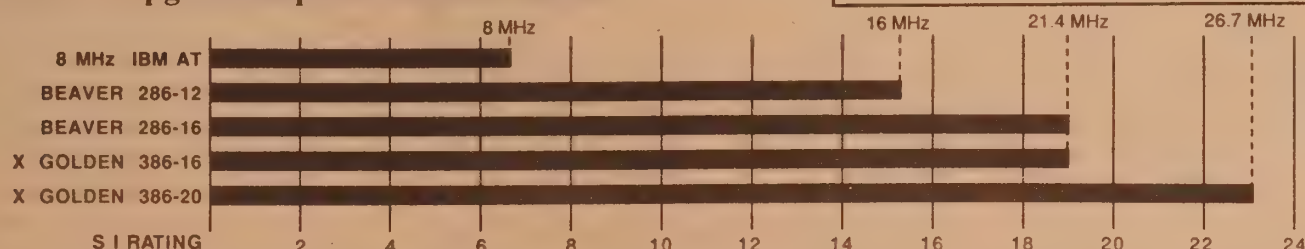
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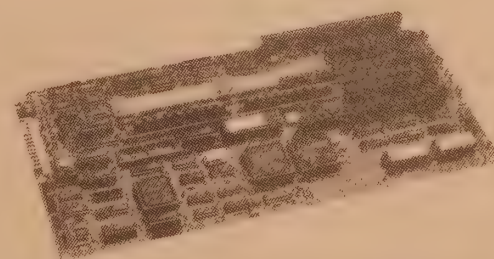


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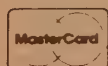
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BY BENNETT FALK

The Joy Of X

The Old Curmudgeon Explains MIT's Windowing Interface

"Pipe down, will ya, bub? There's ladies present!" the Old Curmudgeon barked over his shoulder. Behind him a warehouse manager was shouting obscenities and incomprehensible instructions into a cellular phone. He looked up with a scowl, but the Curmudgeon had already turned back to his lunch companion, a pleasant brunette named Edna with a shy smile and sensible shoes. It was lunchtime at Rodoni's.

Looking into his half-empty beer glass, the Curmudgeon spoke: "Life used to be so simple: you sat down at a terminal, it didn't have to be fancy, it could even be a teletypewriter, a true tee-tee-why. You typed in your login name and your password and UNIX gave you a shell prompt. When you issued commands, the computer at your fingertips ran 'em and printed the output on your terminal. With nothing more than a terminal and a keyboard, you were in control. What could be better, eh?"

"I don't know, Mr. C.," Edna responded uneasily, "Maybe a Macintosh?"

The Curmudgeon snorted. "Yeah, maybe so. But's that not how things worked out. After a while there were too many users for one machine, and they had to buy another one, and then somebody strung a couple of serial cables between the two machines so folks from either machine could use the 'cu' program to log in to the other one and do stuff. And that was nice, too, but the serial lines were kind of slow, and only one person at a time could log in to the other machine. And when we had to get a third machine, they had to rethink everything, and went out and got Ethernet cables and some fancy network software for the whole shebang."

"Oh, dear." Edna's forehead wrinkled. She was opposed to drugs, and there was a suspicious, narcotic ring to the word "Ethernet."

"Well, once that Ethernet stuff was in place, we could log in on one machine, do some work, then do a 'remote' login to either of the other machines and do stuff. And anybody could do a remote login to any of those machines at any time."

"Well, that's nice."

"Of course we still had these simple-minded terminals, so no matter how many computers we

could rlogin to, we could still only work with one of 'em interactively. At least, that's how it was until somebody got one o' them workstations."

"Workstations?"

"Workstations. The modern workstation is quite a production: it's got its own memory and CPU, an Ethernet connection, about a 19-inch bit-mapped screen and a three-button mouse. It's also real likely to have *no* disks of its own: the disk it uses is actually on one of the other machines and is, as they say, 'remotely mounted' by the workstation over the network."

"I see," said Edna, who didn't.

"With all that high-tech display stuff on the workstation, we also got a nice graphical user interface with windows and fonts and whatnot. And the guy that had that workstation on his desk could click his little mouse and open up windows and run a program in each one. If, by chance, the programs had been built to use the graphical interface that ran on his workstation, it would look pretty. But those programs took up a lot of disk space, and the 'bitmapped' version only ran on the workstation. The rest of us had to use the character-based version if there was one."

"Oh." Edna pushed at her mashed potatoes with a fork. She sculpted a higher ridge around the well of brown gravy in the middle.

"They gave the workstation to a really clever guy and he opened up a bunch of windows with a UNIX shell running in each one. Then he went from window to window and did a remote login to a different machine in each window so he could work on a bunch of machines at the same time and watch what was happening on all of them. And wasn't *that* just the cat's pajamas!"

"Mmmhmmm." Edna had a mouthful of peas and carrots.

"Except for one thing. None of those remote logins to other computers knew anything at all about his graphical user interface, so everything he did with those other machines he had to do with the old character-based user interface that the rest of us were using. That didn't seem so bad until we got a couple more workstations, and the folks that used 'em tried to login from one workstation to another and run some of the graphical software over that remote login connection, and guess what."

"I don't know. What?"

The Curmudgeon cackled triumphantly, "That didn't work at all! The graphical software wasn't written to drive display hardware across the network: it could only make calls to the graphics devices on the machine it was running on."

"Oh, my."

"Well, that was a real pain, because before long all the folks who had workstations were clamorin' for their own copies of the graphical software and bigger disks to hold all these duplicate copies. It was beginning to look like 'Workstation' just meant big, expensive personal computer."

"Like a Macintosh?" Edna chimed in.

"Or even worse," the Curmudgeon nodded, leaving the alternative to Edna's imagination. "Fortunately we weren't the only people having these problems. All around the country people were trying to figure out how to make programs run on computers in a network and how to get the most out of fancy user interface hardware. If you wanted to make this problem even harder, you could imagine that the computers on the network had different processors and different operating systems."

"Why would anybody want to make the problem harder?"

"Well, take your Institutions of Higher Learning, for example. They more or less have to have one of everything to be able to teach computer science. Because they do so much experimental stuff, workstations make good sense: if something goes wrong on a workstation, it probably won't affect anybody else. But you also need to be able to get from each workstation to the larger computers in the network, and once you're there, you don't want to tie up the larger computers with dumb stuff like controlling the video display. See?"

"Uh, yes," Edna lied again.

"They had all these problems at MIT (that's Massachusetts Institute of Technology, but don't tell 'em I told ya), and they came up with a pretty good approach to all this. They call it a 'window system', and its name is 'X', but there's a lot more to it than that."

"So it *is* like a Macintosh?"

"No, not really. When you buy a PC window system, and Macintosh is as good an example as any, you get a certain style of video display. The PC window system usually reflects a policy about what the screen should look like: do the windows use pull-down or pop-up menus, are dialogue boxes used and what do they look like, how are borders drawn around the various things on the screen, and how many clicks of which mouse button are needed to make a choice. That kind of stuff."

"But 'X' is completely different. The basic idea behind it is that you're trying to get something done on a workstation attached to a network of computers. 'X' gives you a program called a 'server' that controls the workstation's fancy display and communicates with the programs you have to use to get your work done. These programs are called

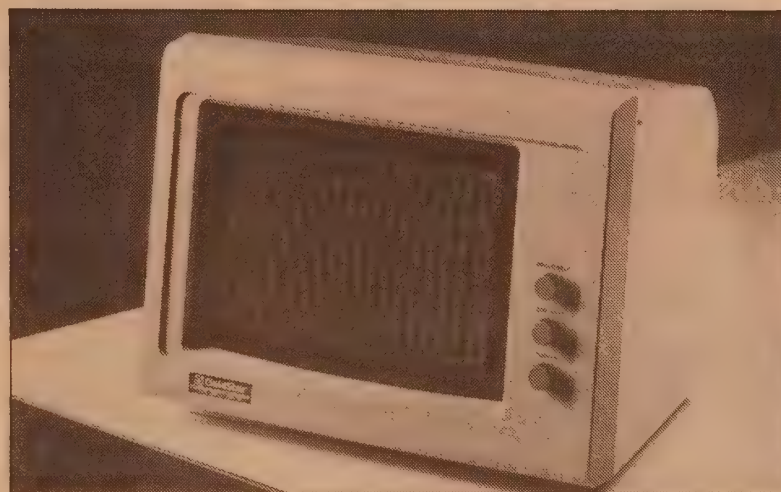


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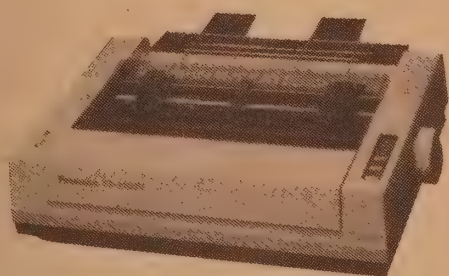
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'clients.'

"The server actually runs on your workstation, and you control it by typing commands on the keyboard or using a mouse of some sort. Client programs, on the other hand, don't have to be running on your workstation. They can be running anywhere on the network and still talk to the server that controls your display. The communication between clients and servers is all done through the 'X' protocol, which is basically a language that lets the client request display resources from the server without knowing anything about the operating system or the hardware where the display occurs."

The Curmudgeon took a deep gulp of beer. Edna sat with a quizzical look and finally broke the silence. "Where do clients come from?"

"What?"

"Where do clients come from? If the server is in control of your display and keyboard and all, how do client programs get started? Can the server start clients?"

"No, no, not at all. You have to start clients from the operating system like any other program."

"So, what's the point of starting up an 'X' server if there are no clients to talk to it?"

"If there really were no clients, there wouldn't be any point in starting the 'X' server. Most people start up at least one client program in the background from the operating system just before they start the server. When the server comes up, the client connects to it and puts a window on the screen. Once you've got one client running in a window with a UNIX shell, you can start other clients, but you have to start clients from the operating system. In fact, you can even start up a client that talks to a server on someone else's workstation."

"Isn't that kind of rude?"

"You'd certainly want to be discreet about it."

"Well, the whole thing sounds distasteful. I mean, what kind of programs are these clients, anyway?"

"They're all sorts of programs. Graphics programs, utilities of various kinds, database managers—there's even an 'X' adaptation of the 'hello, world' program that's used in all the programming books. What all the 'X' clients have in common is that they're built using a library called 'Xlib' that enables the program to use the 'X' protocol. No matter what the program, Xlib is always there. The functions in Xlib are very low level, and most people prefer to deal with them indirectly through a 'toolkit' that simplifies the use of Xlib. A standard toolkit named 'Xtk' is provided by MIT, but there are lots of others, like DEC's "X User Interface."

"For people who want their windows to have a certain look, there are collections of window gadgets, or 'widgets,' that sit on top of the various toolkits. The MIT people have the Athena Widgets from the original project for which 'X' was developed. Sony and DEC and Hewlett-Packard and AT&T and Sun all have their own sets of widgets to standardize the appearance of their displays."

"I'm getting dizzy."

"Here, have some water," the Curmudgeon pushed a glass of iced water across the table toward her. "Anyway, there's all kinds of furious development to put out tools to produce applications that use 'X'. But all those tools use the same Xlib and 'X' protocol. There's an 'X' consortium to kind of administer the protocol and make judgments about how well new products conform to it, and that's a good thing, because, like UNIX a long time ago, 'X' is about to make the transition from nifty educa-

Like UNIX a long time ago, "X" is about to make the transition from nifty educational tool to industry standard.

tional tool to industry standard.

"You can still get a tape of all the 'X' windows source code and so forth from MIT for a nominal charge. But the general public will probably want to get 'X' servers and application-building tools for their particular workstations from their regular vendors so they can get support for later versions and the like. (Apple has an 'X' package for the A/UX on the Mac II and SCO is working on an 'X' product for XENIX.)"

"I don't know, Mr. C. This 'X' thing doesn't sound much like a windowing system."

"That's the beauty of it. 'X' gives you an architecture for distributed applications and it lets you use the graphical interface, but it doesn't force you to make everything look the same."

"Isn't that confusing? Doesn't it make the programs harder to learn?"

"Maybe so, but that's a small price to pay for having a standard."

"I don't see what's so 'standard' about it if the programs all look different."

"With 'X' everybody uses the same tools to build their displays and such, but the actual appearance of the display is left up to the programmer. There's a lot of programs already on the market that wouldn't give 'X' a second look if they had to change the way they appeared on the screen. 'X' stands a good chance of becoming a standard if it isn't too restrictive, you know."

"What's that supposed to mean?"

"Just that window appearance is too trendy a thing to standardize. The important thing is to develop a set of tools to build windows out of and port those tools to enough computers that developers don't have to start from scratch every time they set out to build a fancy interface on a new computer. In fact, the application developer can build one program that uses Xlib (or an 'X' toolkit or a set of 'X' widgets) and it will be able to use the graphical user interface on any workstation that has an 'X' server."

"This certainly seems like a lot of effort just to use a graphical user interface."

"Yeah, but it's worth it."

"Why? What do people do with all these things?"

"All sorts of useful stuff," the Curmudgeon tried to say, but he was drowned out by angry wailing behind him. The warehouse manager at the next table, cellular phone in hand, yelled threats and abuse and dire imprecations until he was red in the face. Someone had driven a forklift off the edge of the loading dock, and there would be hell to pay. ■

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Everex Step 286-20	4.20	27.4	23.0
Everex Step 386-16	3.93	27.3	19.5
Everex Step 286-16	3.27	21.4	18.4
AST Premium 386-20	3.04	20.0	21.0
Wyse 386-16	2.98	20.6	17.6
Acer 386-16	2.99	20.6	16.2
Compaq Deskpro 386-16	2.90	20.0	17.6
IBM PS/2 Model 80, 16MHz	2.87	20.0	17.6
Everex Step 286/12	2.45	15.9	13.7
AST Premium 286-10	2.02	13.0	11.1
Compaq 286-12	1.89	11.7	11.5
IBM PS/2 Models 50, 60	1.58	9.8	9.8
IBM PC/AT 8MHz	0.93	8.0	7.7



Ask About The NEW 20 MHz 286.

"The Everex Step 386/20 is the fastest 20 MHz machine PC World has ever tested. It's speed, large memory cache and jumbo expansion capacity make it an excellent server. Whether you use it as a server or a powerhouse workstation, you're unlikely to find a faster 20 MHz PC than the Step. The Step 386/20 is clearly the best 20 MHz PC for the money in this roundup." PC World, December 1988

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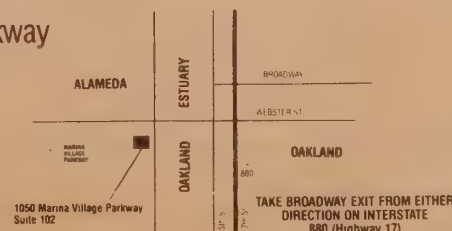
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BY MATTHEW LEEDS

Amiga Festival Coming To SF

Most people read computer magazines for their informational content. Just how accurate, timely, and ultimately truthful that information is can vary quite a bit, both from publication to publication and from author to author. Without getting too far into the issues of journalistic integrity, it is always important to consider the source (and what you know about the source) on any information that has more than a passing importance to you.

Owning stock in a company, being a consultant, having a relative employed at a company, or being an employee—any of these and other circumstances can be a source of bias in a reporter's coverage of news and events. The more you know about potential conflicts of interest, the better you can decide how much credence you care to give to any single report.

Last month I mentioned that I had taken on a new full-time job with a local software company. For the record, I now work for Brøderbund Software as documentation manager. It's up to you to decide if my coverage of news and events in the Amiga marketplace is biased as a result. I don't think so, but then I'm biased.

The Amiga Festival

On to other stuff. The Amiga Festival is shaping up nicely. For those of you who have been living in a cave, the 1989 Amiga Developers' Conference will be in San Francisco, and local organizers have decided that this confluence of Amiga developers makes for an excellent opportunity to create an Amiga event. The Amiga Festival will be at the Concourse Exhibition Hall at 8th & Brannan in San Francisco on June 17th & 18th. The Festival will include an exhibit (read trade show), Amiga art & video show, seminars, presentations, live performances, and several contests. For more details contact Amiga Festival, POB 42252, San Francisco, CA 94142, (415)431-1799.

Photon Paint II Ships

Photon Paint II is out. For those of you looking to HAM it up (sorry, couldn't resist) the latest in HAM paint and ANIMation has arrived. That's right, support for both loading and saving ANIM's is built-in. Need to do a little touch-up work on your

latest animation? Just load it into *Photon Paint* and flip through the frames. This new version also has new brush options, and new "3D" surface mapping effects, including a contour mapping function that's great for creating unusual backgrounds. If you are working with HAM images you need this program.

MicroIllusions is to be commended for its innovative approach to keeping those Amiga users with only 512 K still in the HAM ballpark. *Photon Paint II* will work on a 512 K Amiga by swapping program segments in and out of memory from disk. Slow going, but better than nothing, and the entire program will load in if you've got more memory. A great idea. The next generation HAM paint program is here now, and until those other programs that have been announced but still not shipped arrive, *Photon Paint II* is the obvious choice.

The Product Parade

There are a lot of new products released every month for the Amiga. Some companies find it hard to get attention amid the clutter. One way companies try to stand out is through creative press releases.

Perhaps the most glorious recent example of this is the press kit I received from Accolade for *The Duel: Test Drive II*. I don't usually cover games, but there is no way I could ignore the plethora of interesting items that were contained in the box that UPS brought. Of course, all the attention-getting is useless if the product itself does not live up to the expectations created by the press kit. You can rest assured that *Test Drive II* will not only hold your interest but also leave your palms sweaty and your shoulders tense. How often do you get to drive the most expensive, fastest production race cars in the world? Along with the game, Accolade has also released an accessory disk of additional cars and an accessory disk of new road races down the coast of California. A recommended game. Congratulations to Charlotte Taylor at Accolade, the mastermind behind this innovative P.R.

WordPerfect is so pleased with the sales of its word processor on the Amiga that it's porting its spreadsheet, *Plan Perfect*, as well. It is currently in beta test, and should be out sometime this year. The Amiga market rewards those companies that produce quality products, and it's large enough to support the "major" software publishers. Perhaps it's time for Microsoft and a few other developers to take another look at the Amiga.

New Horizons Software has released *ProFonts I* and *II*, two sets of fonts designed to look good when printed on dot matrix printers. *ProFonts I: Professional* and *ProFonts II: Decorative* both include a

The next generation HAM paint program is here now, and until those other programs that have been announced but still not shipped arrive, Photon Paint II is the obvious choice.

utility called System Mover that will let you install your new fonts on any disk without using the CLI.

Great Valley Products is working on an unusual 68030 accelerator board. The Impact 030 accepts a Motorola 68030 running at either 16 or 25 MHz and has a socket for a 68881 or 68882 math coprocessor. The card also has a built-in hard disk controller that supports very high speed data transfer rates directly to the on-board 32-bit RAM. The 32-bit RAM uses nibble mode access to allow no wait-states even while running at 25 MHz. Oh yes, the hard disk can be set up as an auto-boot drive. This looks to be a screamer, but it may not be compatible with some other Amiga products due to its design. I'll keep you posted as more information develops. GVP has also added support for the Syquest removable media hard drives. These drives use a 44 Mb cartridge with a 25 Msec average access time. Perfect for storing animations.

Shareware program of the month goes to the latest version of *PopCLI*, version 4. Along with the standard screen blanker and hotkey calling of a new CLI or Shell, this latest version auto-detaches from the startup CLI so that you no longer need to use Runback, and it allows an unlimited number of hot key assignments. I can now bring up my text editor or disk utility at the touch of a key. Look for it on your favorite BBS or a new Fish disk. ■



Copyright ©1989. All rights reserved. Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics, and related fields.

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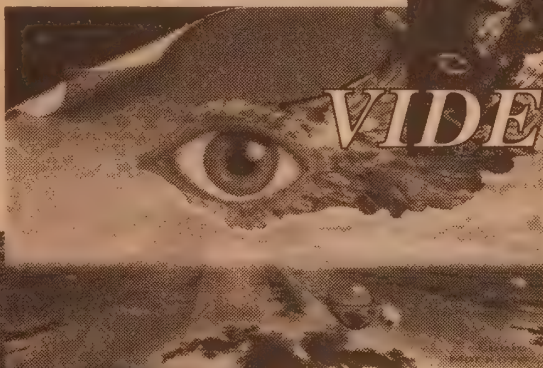
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CONTESTS PRIZES!

Five contests: Best Art, Best Video, 2 Games playoffs, Most Imaginative Use of Amiga Fonts! Prizes include CASH \$\$\$ and/or hardware and software from Electronic Arts, Microbotics, Haitex, Maxis, InterActive Softworks, Zuma Group, AlohaFonts, Kara Fonts, National Type Foundry and others. Get official contest rules from the four sponsoring Amiga Dealers listed on this page. Hurry! Some entrys must be in June 1st.

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Computer Spectrum of Burlingame (415) 347-4576

Exhibitors call (415) 388-8893 or (415) 431-1799 for info

ATARI ST

BY DAVID HAWKINS

Back To BASIC

One of the first computer languages I learned was BASIC. This was a long time before personal computers and BASIC was a quick way to produce the results needed for my mathematics class.

A computer language is a way to write your own programs to run on your computer. Other computer languages include C, Pascal, Fortran, and assembly. All these are available on the Atari ST, but for this column we'll look at BASIC.

What Is BASIC?

BASIC stands for Beginner's All-purpose Symbolic Instruction Code. It was developed back in the 1960s as a simple way to teach programming. The

Some people look down on BASIC as if it were a toy language. It's not. My brother makes a living writing BASIC programs. BASIC programs can do "real" work and can be easy to maintain if written well. Getting the job done counts.

statements in BASIC are easier to read than in some other computer languages.

The flip side of this is that BASIC programs can be a lot longer because the statements are simpler. It is sometimes possible to write one line in a C program that does what 10 lines in a BASIC program does.



Copyright © 1989 by David Hawkins. All rights reserved. David Hawkins is the host of the Atari conference on The WELL (415/332-6106); send email to dhawk. He has one of the first Atari ST 1040s sold in San Francisco, both monitors, an Okimate 20 color printer, and disks all over the room.

Which BASIC?

There are several BASICs available for the Atari. Each one is slightly different in how they handle the ST. The one I've been playing with is GFA-BASIC 3.0 from Antic Software, 544 Second Street, San Francisco, CA 94107. A large number of programs that you can find on bulletin board's are written in GFA BASIC.

You can check with your dealer about which BASIC would be good for you. Remember that if you are going to do advanced work on the ST, you'll need a BASIC with advanced features. It needs to have features that allow you to open and close windows, check the mouse position and which mouse button is being used, and handle colors if you're using a color monitor. It should also be able to read the joystick if you're using one.

By The Way...

Some people look down on BASIC as if it were a toy language. It's not. My brother makes a living writing BASIC programs. BASIC programs can do "real" work and can be easy to maintain if written well. Getting the job done counts.

Editing

When you start up GFA BASIC, you are in the editor. You can start typing lines right away. The editor checks each line as you type it to see if the line is a valid BASIC statement. It is still possible to make mistakes, of course, since the editor doesn't know what you are trying to do, but at least you know that the line is a statement.

The manual starts off with a simple six-line program that allows you to draw designs using boxes and the mouse. It looked so simple that I mistyped the last line. Unfortunately the line I typed was a correct BASIC statement, but it didn't do what I wanted. By the way, I learned that you can break out of a program by holding down the Control, Shift, and Alternate keys, which I didn't see in the manual.

The editor has control key sequences that allow you to move around quickly in the program. These also help you to define blocks of text, and to delete sections of the program.

Running A Program

After you've typed in a program you might want to save it to disk. GFA BASIC has a menu at the top of the screen with an option for saving and loading programs. After saving it, you can select RUN and see how your program works. This allows you to run the program, find any bugs, and immediately switch back to the editor to make corrections.

...I kept hearing that there was a new game out that was very addictive. It's true. Tetris, from Spectrum HoloByte is very addictive. And it looks so simple, too.

Conclusions

I liked working with GFA BASIC. I didn't get far enough to see how efficiently the advanced functions worked. It would have been helpful if there had been some sample programs on the disk that I could have played with. (I prefer to modify others' programs instead of writing my own from scratch.) The manual needs to be updated, but Antic has said that a new one will be coming out soon.

At work I usually am dealing with C programs. It was nice to sit down and work with the simple statements of BASIC—I still think BASIC is a good way to get started.

Game Addiction

Well, I kept hearing that there was a new game out that was very addictive. It's true. *Tetris*, from Spectrum HoloByte (2061 Challenger Drive, Alameda, CA 94501, phone (415)522-3584), is very addictive.

And it looks so simple, too. Shapes are falling from the top of the screen. You can rotate the shapes, and move them to right or left. You can fit the shapes into a continuous line across the screen and the line is removed. If the area fills up, the game is over.

As you move up to the advanced levels, the shapes fall at a faster rate. One of the nice touches about the game is that there are different backgrounds at the different levels. The music is good, but I was glad I could turn it off.

The program was originally written by a couple of Soviet programmers. It's now available for IBMs, Macintoshes, Amigas, as well as the ST. To play it on the ST, you do need a color monitor.

And it seems so simple—you just need to fit the shapes into a continuous line...maybe if I try again...

(I did eventually hide my copy in another room.) ■

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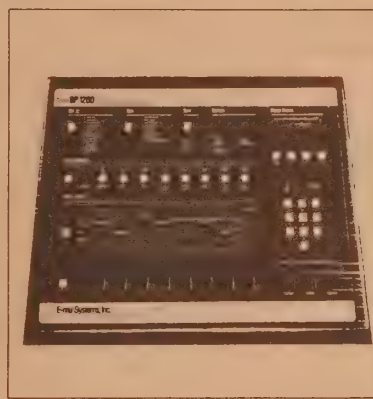
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USER GROUP NETWORK

BY MARY EISENHART

More Good News For Amiga Fans

Bay Area Amiga users have a big treat in store—the **1989 San Francisco Summer Amiga Festival** comes to the Concourse Exhibition Hall, 8th and Brannan, June 17 and 18. According to **Lion Kuntz**, who's one of the people putting this extravaganza together, the Festival will include what's being billed as the World's Largest Combined Amiga User Group Meeting, an event that will bring together groups from Sacramento, Palo Alto, Chico, Berkeley, Oakland, Santa Rosa, Santa Clara, and other Bay Area cities. Since the Commodore-Amiga Developer's Conference coincides with the Amiga Festival, a turnout of well over 1,000 is expected.

The meeting will include a brief address by **Jay Miner**, father of the Amiga, a live MIDI performance by **Phil Burk** and **Robert Marsanyi**, and announcements from various Amiga developers and Commodore-Amiga.

The Festival itself will also include the world's largest-ever exhibit of Amiga graphic art, as well as video demos, and music performances. Not to mention, of course, booths featuring the wares of Amiga developers and local dealers. If you'd like more info about the show, give Lion a call at (415) 431-1799; if you think you or your group might like to have an exhibit, call Lion at the same number, or East/West Computer Shows at (415)388-8893.

An interesting issue I hadn't particularly thought about was raised by **Duane Peterson** of Concord, who writes "I have a Commodore PC10 PC, which is an IBM compatible unit. There is a Commodore User Group here in Concord, but they are 64/128 users, and the person I spoke to gave me the impression that I would not fit into this group very well."

I referred Duane to some local PC user groups. However, if anybody out there knows of any groups specializing in Commodore's PC compatibles, please let us know, and we'll publish the info for the next person in a similar situation. Now that Atari's putting out a PC-compatible handheld computer, the ST user groups will probably be getting some DOS-y calls pretty soon too, so we'd welcome info on any group's supporting Atari's compatibles too. Thanks, folks.

If **Convergent Technology's Workslate** is one of your interests, there's a new group being formed in Hayward just for you. You can get more info by writing to **Dean** (of the absent last name) at P.O. Box 4455, Hayward, CA 94545, or by calling him at (415)785-7725.

Robin Spalding, who hosts the WELL's On The Air conference, passes along the information that radio station KALW-FM now has its own BBS for programming updates and station information. It operates at (415)641-4373 between 6 pm and 8 am on weekdays, and all day weekends and holidays. Parameters are 8-N-1. If you have problems, call **Bill Helgeson**, the sysop, at (415)648-1177 during normal business hours.

Speaking of the WELL, if you're a lapsed Wellbeing who gave up in exasperation because the venerable VAX it ran on became utterly unable to handle the user load, causing truly glacier-like performance, rejoice and log back on. The WELL has a spiffy new Sequent B8 minicomputer, the speed of which

brings giggles to those of us who've developed the habit of going for coffee while waiting for a prompt. Furthermore, the discussion in most of the conferences seems to have livened up considerably as a result of the hardware upgrade. So even if you haven't been on the WELL yet, you couldn't pick a better time to take the plunge. For more info, call **John Coate** at (415)332-4335.

A new low-cost telecomm network has been created to serve the specialized needs of the estimated 30 million home-based business owners in the US. The **Home Office Business Network** is a joint venture between Minitel USA and Infonet, and offers information on such subjects as marketing, tax reduction, sales and finance on a monthly basis, as well as electronic mail and conferencing. There is no subscription charge for this service; access charges are \$10.20 per hour and can be billed to a credit card. PC, Mac, Apple II, and Commodore 64 versions of the terminal emulation software are available free of charge. Call Richard Bruno at (415)239-6162 for more info.

Until we meet again next month, please keep the news coming—send US Mail to User Group Network, 5951 Canning Street, Oakland, CA 94609, fax to (415)652-4618, and email to **microx** on the WELL (415/332-6106) or **{pacbell, hplabs, ucgvax, apple!well!microx}** from Usenet, **MICROTIMES** on MacNET, **bex754** on The Source. We also cheerfully accept faxes at (415)652-4618 and, (213)467-548. ■

BULLETIN BOARDS

INTERNATIONAL

Cassia Express. (065) 344-9163. 300/1200/2400 24 hrs. Singapore. Sysop: N.M.Rahman

FidoNet Argentina (054). (011) 541-22-419. 8-N-1 3 PM-11 AM PST. The 1st fido node in Argentina has over 450 subscribers. Specializes in issues from S.A. PD software library to d-load. Sysop: Pable Kleinman

Remote Bulletin Board (Singapore). (065) 445-1646. 9600/2400/1200 24 hrs. 218 MB Online (IBM upload/download). Sysop: Umar A. Rahman

203

Terrapin Station. (203) 656-0134. Grateful Dead Board. Sysop: Klaus and Gretchen Bender.

209

Bertha Board BBS. (209) 239-9853. 300/1200/2400, 8-N-1, 24 hrs. MS-DOS, others. 95 Mb online. Emphasis on programming. Uploads and downloads. No fee but registration required. Sysop: Kenneth Roach.

Oasis Software Library. (209), 823-2803. 300/1200/2400, 8-N-

1, 24 hrs. Shareware and PD for IBMs and compatibles. No fee but registration required. Sysop: Tim Campi.

Silicon Realms. (209) 754-5530. 300/(1200 Soon) 9:30AM to 6:30AM. Formerly Motherload 64. Commodore, PET & Plus/4. Programmers board, Continuing & Short Story boards, FRPG. Sysop: Joe Commodore

SMERDON'S CASEL (California Attractions, Sights and Entertainment Listing). (209) 521-4910, 8-N-1, 24 hrs., 300/1200/2400. Information on over 700 things to do and see in California. Free. Sysop: Sharon Smerdon.

The Backdoor BBS. (209), 952-9430, 300/1200/2400, 8-N-1, 24 hrs. MS-DOS oriented board. Lots of software, online chess game, much more. Sysop: Randall Fox.

212

Lawyers Linked by Modem. (212) 766-3788. Three hundred registrants. A BBS for law-related material. Sysop: Rees Morrison.

RadNET OnLine Services 24 hrs. Online computer network for Nuclear Medicine professionals. Offered through Compuserve. Regular on-line conferences. Call for information and registration. Voice phone: (212) 856-

6449.

213

Ann Leung's Best Buys. (213)372-4050. Real-estate in LA South Bay. Best buys are compiled daily by Gloria Kung. Type GO BEST upon entry.

Ashton-Tate Support. (213) 538-6196. Free technical support, answers to questions about Ashton-Tate software products.

Backroom BBS. (213) 420-7622, 8-N-1, 24 hrs., 300/1200/2400/9600. Very Mac, also Apple II and MS/DOS. Direct access to Applelink, but not by user.

Beaver Creek. (213) 437-1410. 8-N-1 All but 4-9 PM. Sysop: John Campbell

Beta RBBS. (213) 393-9777. 1200/2400. Free entertainment BBS. Audio, video, DJ, music, movies, news and discussions. Sysop: Jason Lin.

Career-Point Information (CPI). (213) 423-4999, 24 hrs., 10 lines on rotary. CD-ROM, INFO-MAT Magazine, USA TODAY, Writer's Board, Online Shopping and CHAT. "Where the professional & BBSing come together!" Over 1400 active users. Sysop: Mark E. Bishop. Voice: (213) 428-0363.

Century Computers Amiga BBS. (213)697-2004. 24 hrs., 1200/2400. Sysop: Philip Marhqrst.

Chastity's Bistro. (213)656-3060. 300/1200/2400. 13 lines under DLX BBS software, private chats, 40 different channels for group chatting, message bases, file library, database system, a user matchmaker, user profile browsing. Must be over 18, voice verified.

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Easy Reader Electronic Edition. (213) 372-4050, 8-N-1. Free online publication. Includes movie times, editorial, 500 new classifieds each week and more. Online ordering of classifieds and letters to the editor allowed. Sysop: American TeleWeb.

Graphic Encounters BBS. (213) 439-9000. 8-N-1, 24 hrs., 300/1200/2400. First logon requires password "computer." Email, MIS employment, graphics, CHAT, technical information, Oracomm, Sysop Corner. Operating 6 lines. Sysop: Bill Bloomer. Voice: (213) 439-3135.

Grey Matter BSS & RCP/M. (213) 971-6260. 300/1200/2400 24 hrs. Televideo and Timex/Sinclair support. Sysop: Ed Grey.

Home Loans BBS. (213) 372-4050, 8-N-1, 24 hrs., 300/1200. Daily update of mortgage rates. Voice: (213) 316-5508.

Homer. (213) 490-0436. 24 hrs. Home automation, science, and general interest. Sysop: Rick Ellis.

ICN. (213) 204-0646. 2400/1200/300 24 hrs. The place to buy/sell/trade collectibles (stamps, books, etc.)

Information Symposium. (213) 258-5086. 300/1200/2400 8-N-1 24 hrs. Serving the Info. Professional, Tech. Info, M.I.S. Employment. MS-DOS; OS/2; graphics. Password req'd for access is "Micro." Sysop: William Bloomer.

King & Queen Of Hearts BBS. (213) 461-9899. 8-N-1, 24 hrs., 300/1200/2400. Multiuser, multi-interest, public/private chat, D/LI & U/L. For IBM/Commodore. Adults only. Sysop: Bob Overstreet.

LA JOBS. (213)372-4050. Los Angeles' most extensive database of Eng./tech jobs openings. Email direct to employers. Service provided by Los Angeles employers. No agencies. Type GO JOBS upon entry.

LAAUG-LINE. (213) 559-7367, 24 hrs. Bulletin board of the Los Angeles Amiga Users Group. All Amiga owners are invited to join in the message base. Only LAAUG members may download files. Sysop: Gary Woolard.

Loan Line. (213)372-4050 Type GO LOAN upon entry. Voice: (213) 316-5508

Lynzie's Motherboard. (213) 650-0519. 300/1200/2400/9600 8-N-1 24 hrs. Matching, group and private chat system, local social events. W. Hollywood. Sysop: Lynzie Flynn. Also: (213) 650-6172., 659-1982. 3

MacUnderground. (213) 326-4222. 24 hrs., 300/1200/2400. Macintosh only. News, reviews, apps., 80 megs online, updated weekly, full Mac support. Sysop: Tim Byars.

MEDCOM INFO BBS. (213) 644-5580. 24 hrs., 300/1200/2400. Multi-user games, chat, computer art, PC-Pursuit access & info, news IBM-PC freeware/Shareware & mail.

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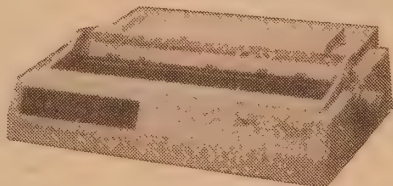
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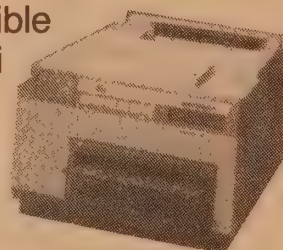
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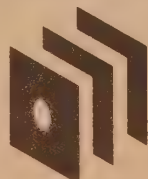
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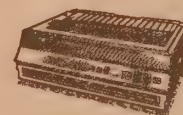
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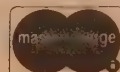
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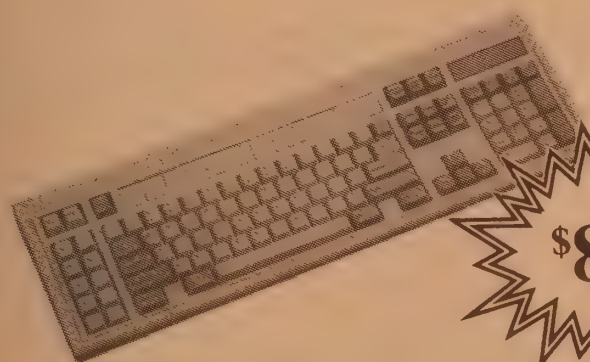
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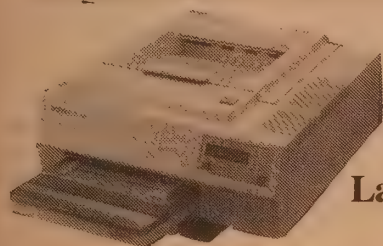
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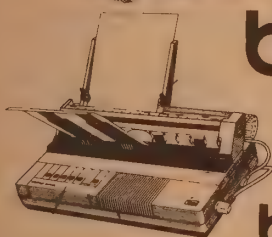
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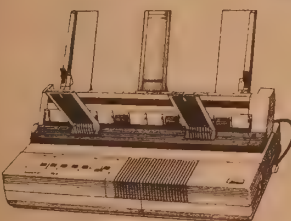
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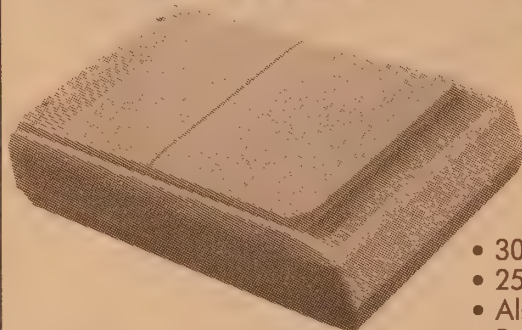
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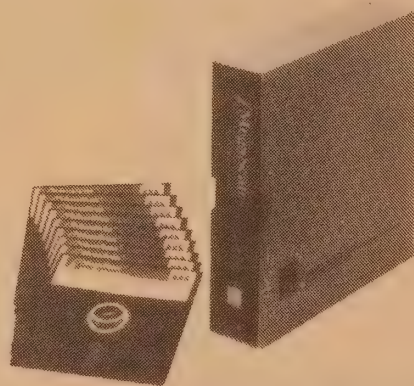


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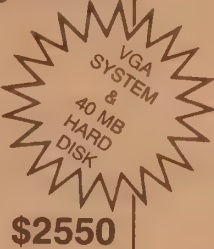
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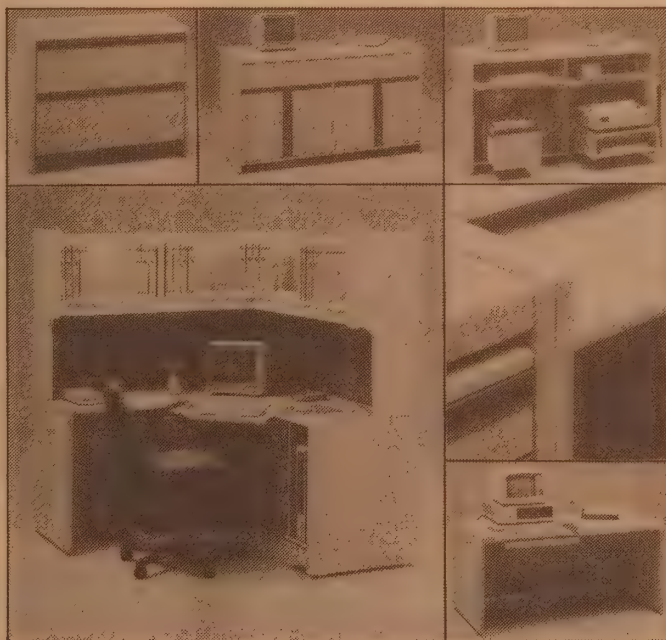
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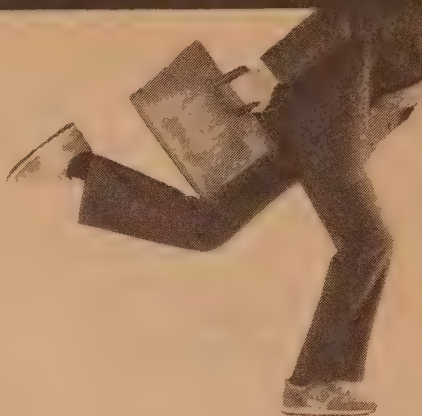
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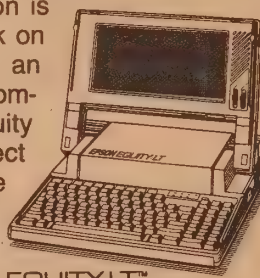
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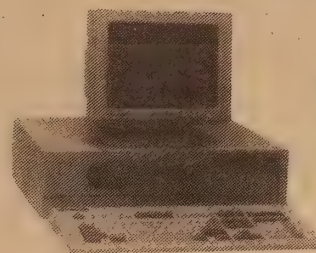
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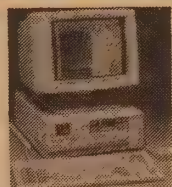
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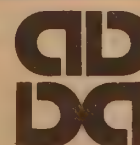
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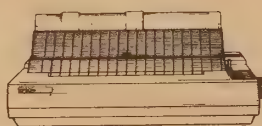
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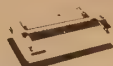
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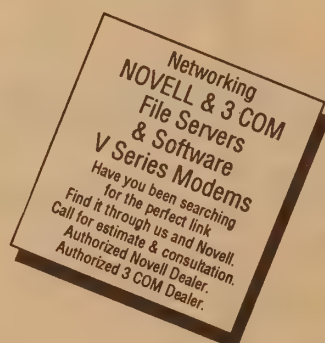
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Gold Coast. (707) 431-2632, 300/1200.

Grapevine. (707) 546-4938, 300/1200/2400.

Graveyard. (707) 526-0193, 300/1200, 9 PM to 9 AM.

IBM PC Users' Group Of The Redwoods (PCUGR). (707) 538-8710. PD and shareware library, membership information, messages, chat. All PC and clone users invited.

MacComm Connection. (707) 795-1721. 24 hrs., 300/1200/2400. A Macintosh and Commodore oriented board. Also free advertisement section. Free to all. Sysop: Randy L. Lust.

Metropolis. (707) 528-1345, 300/1200, 24 hrs. Comic books, superheroes, science fiction, contests, fantasy, role-playing games, media forum and prizes.

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Nite Owl Motel. (707) 823-3052, 300/1200/2400, 9 PM to 8 AM. Network.

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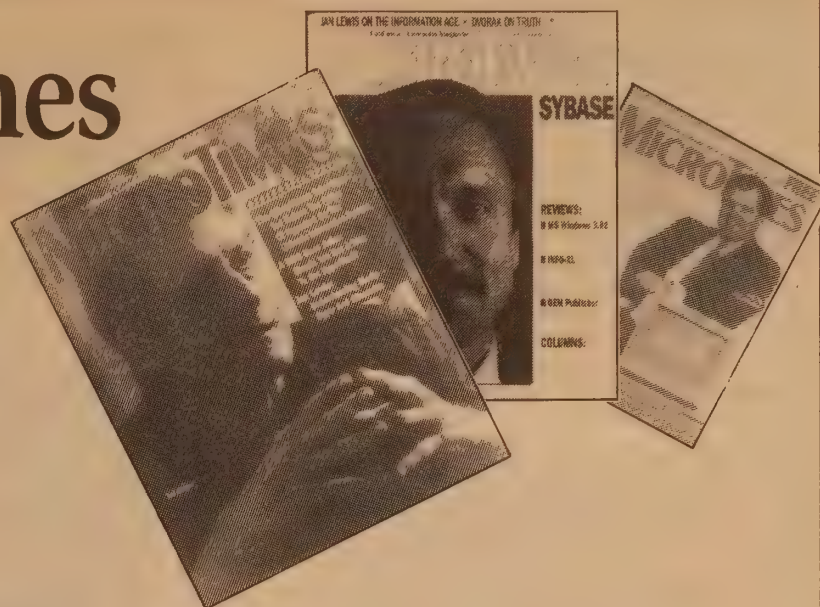
Here are the results:

1. PC Magazine
2. Byte
3. **MicroTimes**
4. MacUser
5. MacWorld
6. Lotus
7. Infoworld
8. Newsweek
9. Time

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SCF. (707) 545-0476, 300/1200/2400. Network.

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Sharp Resolutions. (707) 539-7462, 300/1200, DMG network.

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578-0385, 300/1200/2400.

Small Babble Board. (707) 527-5699, 300/1200.

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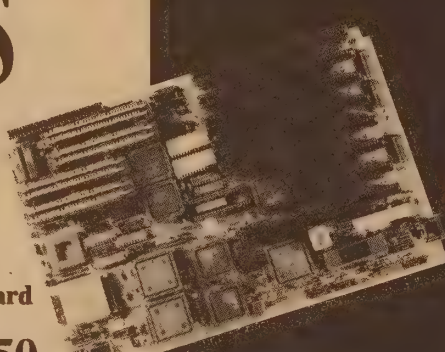
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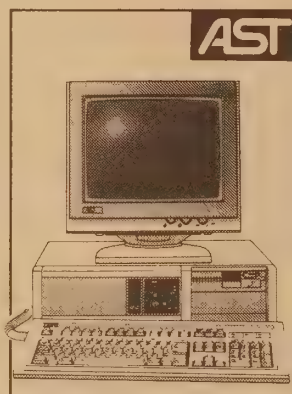


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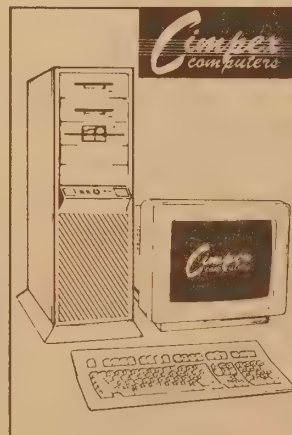


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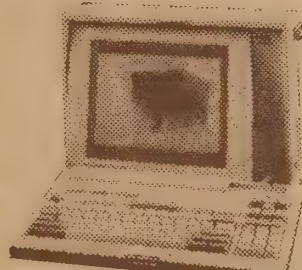
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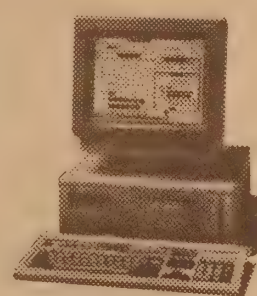
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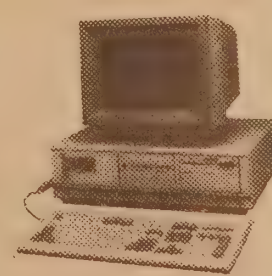
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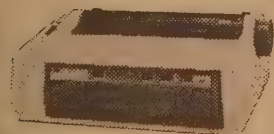


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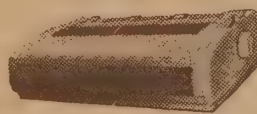
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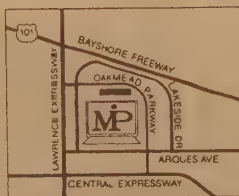
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ANimated People User's Group In the spirit of Max Headroom and "Hitchhiker's Guide," we're attempting computer digitization/animation of real-people personalities. San Jose. Call: Tom, (408) 226-9225.

Artificial Intelligence Special Interest Group. Meetings: 2nd Thurs. Engineering 101, Santa Clara University. Independent nationally recognized group studying and developing AI and artificial neural networks. Call Kent Byron (408) 244-8739 for

info.

Artificial Intelligence Special Interest Group (AISIG). Call Rita Zokaei, (415) 574-8225.

Association for Women in Computing. Meetings: 1st Wednesday of each month, 6:30 PM, Stagecoach Restaurant, 44 Montgomery St., San Francisco. Call 655-3110 for information.

BAY HPX. Meetings: 2nd Saturday Laptop & handhelds. Call Jim Horn or Michael Felsenstein: (707) 794-3130/(415)564-8279.

Bay Area CYMA Dealers Association. Meetings: 2nd Tuesdays, Thursdays; 4:30-6:30 pm, San Mateo. Networking and support for McGraw-Hill accounting software consultants and retailers. Call: (415) 345-5955.

Baytalk Computer Users Group. Write: PO 369, Berkeley 94701. BBS: (415) 864-6430, 300/1200, 8-N-1.

California Genealogical Society Computer Interest Group. Meetings: 2nd Sat.- odd months Genealogical Society Library, San Francisco.

COBOL And SQL Users Club Call: Dr. Badshah K. Mian, (415) 337-1787.

Computer Associates Users Group. Meetings: 3rd Wednesdays, 6:30 pm, 1500 Van Ness Ave., Call: Brenda Goldstein, (415) 864-6770.

Computers & Law Assoc. Meetings: McGeorge School of Law, 3200 Fifth Ave., Sacramento, CA 95817.

CYMA/McGraw-Hill Users Group Meeting. Meetings: Monday, October 24, 3:00-5:00 pm, McGraw-Hill Publications Building, 425 Battery St., San Francisco. Meet CYMA professionals and learn how to get the most from your software. Call: (415) 839-7466.

Digi-Dunces Un-Ominous. A meeting ground and exchange for the fat-of-finger, the hopelessly analogish, and patients of the electrogratification disease. Presently a confederation of various interests & occupations keeping one another apprised of relevant events & experiences. Contact: SASE, PO 884334, San Francisco 94188.

East Bay User Group. Meet-

ings: 3rd Wednesdays, 7 pm, 12500 Campus Dr., Oakland, Rm R-7, Call: (415) 436-2453.

Entrepreneurial Support Group. CEO. Meetings: SASE, P.O. Box 2781, San Rafael, CA.

Ham Radio Computer Packet Group. Meetings: 2nd Fridays, 8 pm, Salvation Army, 4600 Apian Way, El Sobrante. Learn how to use your computer to broadcast all over the world with the fascinating world of Ham Radio. Call: Bob Fields, (415) 237-3761.

High Tech Gays. Meetings: 2nd Sundays, Part of the National Gay & Lesbian Task Force. Call: (408) 993-3830.

High Technology Entrepreneurial Council. Meetings: Wednesdays, 6:30 pm, Piedmont Community Center, 711 Highland Ave., Piedmont. HTEC is a nonprofit corporation dedicated to providing software developers and other high tech entrepreneurs a forum for developing marketing strategies, building business relationships and exchanging experience and information. Call: Rachel Munoz, (415) 339-3895

MORE: Modemusers Of The Redwood Empire. Meetings: Thurs. July 14; Fri. Aug. 9; 7 PM, Roundtable Pizza, Highway 12 @ Stony Pt. Free membership for modemers who want to get together and talk about local boards. Includes novices to techno-wizards. Call (707) 546-5203.

Mt. Diablo Technology Association. First meeting: Wednesday, Sept. 14. Others monthly at Michael's Restaurant in Walnut Creek. Lunch and evening meetings, send for calendar. Back by popular demand. Will explore common concerns in industry and educational developments. Call: Deborah Scott, (415) 932-4828

Network Users Group (NUG). Next meeting: July 7. Call for location and time. Panel discussion of workgroup software with several major software manufacturers represented. Call (415) 655-6500 for details.

North Bay Users Group (NBUG). Meetings: 2nd Thurs. 7:30-10 PM 201 Maine St., Vallejo, CA. Family Computer Club dedicated to all forms of

computing. Determine market opportunities, group research projects. (415) 564-6669.

Nota Bene User Group. Meetings: 3rd Tues. or Thurs., 7:30 PM Berkeley or Peninsula. For location and date, call Thomas Ross, (415) 845-2410.

PASS: Professional Association of Secretarial Services. Meetings: 2nd Saturdays 11:30 AM, Scott's Seafood, Jack London Square, Oakland. Call: Nina Feldman, (415) 655-4296.

Pracsa, for Sysops & Users. Meetings: 2nd Wednesdays, 6:30 pm, Coco's Restaurant, 1305 South Mary, Sunnyvale. Call: Bill Strouse, (408) 453-3321.

Prolog Forum. Meetings: Monthly, 2nd Thursday 7:00 PM, Belmont and various locations. Prolog Forum is a group dedicated to supporting users of the Prolog computer language in artificial intelligence. Call Mark A. Epperson at (415) 594-9981.

ProTel (Professionals in Telecommunications) Meetings: Monthly. Holiday Inn, 1221 Chess Drive, Foster City. ProTel is a network organization for people interested in telecommunications. Leave a message at (415) 227-5637 for information.

SEF Marketing SIG. Meetings: Oct. 27—Telemarketing; Nov. 29—Teknowledge, 1850 Embarcadero, Palo Alto. Call: Don Morrison, (415) 8328-0356.

SEF OOP SIG. Meeting: Third Tues. 7 pm, Parc Place Systems, 2400 Geng Rd., Palo Alto. Call: Dean Ritz, (415) 859-1043.

SF Robotics Society. Meetings: 2nd Mon. Homestead Savings, Community Hall, 5757 Geary (at 22nd), SF. Guest speaker, developers' roundtable.

Silicon Valley Computer Society. Contact Kent Stafford (408) 286-2969. Or write to 2464 El Camino Real #190, Santa Clara, CA 95051.

Society For Technical Communication. Meetings: 2nd Wednesdays, Berkeley. International association of technical writers, editors, illustrators, and instructional designers. Call: Rae Montor, (415) 531-2315.

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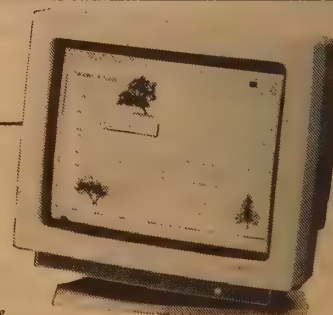
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Software Entrepreneur's Forum (SEF). Meetings: 3rd Thurs. 1875 Embarcadero Rd., Palo Alto. Helps individual software developers and startup software companies. Call for complimentary newsletter. (415) 854-7219.

Technology Executive Roundtable (TER) Meetings: Fourth Tuesdays, 6:00 pm, Santa Clara. Call: Jenny Hoyt, (408) 997-1826.

The Hispanic Computing Association. Meetings: 3rd Thursdays, DataDesigns/American Music, 2388 Mission St., SF. Spanish/English Computer Information, PC & Mac presentations and solutions. Call: Juan Lira, (415) 824-8337.

The Society For Technical Communication. Meetings: 1st Wed. 7:00 PM Room #3, SMUD Facilities, corner of Elkhorn and Don Julio, Sacramento. Devoted to the advancement of the theory and practice of technical communication.

Valley of the Moon Users Group. Meetings: 2nd Saturdays monthly, 10:00 AM, Moose Lodge, Sonoma. All systems welcome. BBS, 300 BAUD, 24 hours, (707) 996-7922.

Women's Special Interest Group. 7:30 pm, Hewlett-Packard, 5301 Stevens Creek Blvd., Santa Clara. For all women interested in computing. Call: Rita Zokaei, (415) 574-8225

USER GROUPS

AMIGA

ACCESS (The Amiga And Commodore Computer Enthusiasts Society). Meetings: 3rd Tues. 7:30 PM Community Room of Homestead Savings & Loan, 999 E. Stanley Blvd., Livermore, CA. Contact Ron Kremkow at (415) 449-1784.

Amiga Addicts Anonymous. Meetings: Newsletter, public domain library, demonstrations. Write PO 4669, Walnut Creek, CA 94596. Call: 689-3453

Amiga East Bay Info Exchange (AEBIE). Meetings: 2nd Tues. 7 to 9 PM 11185 San Pablo Ave., in El Cerrito. Write to P.O. Box 485, Pinole, CA 94564.

ASCITEC: The Amiga Science & Technology Users Group. Meetings: 2nd Thurs. 5-7 PM Lockheed, B/157, Rm. 4-C, Sunnyvale, CA. Scientific/Video Applications. Classes available.

AUGment - Amiga Users Group of Silicon Valley. Meetings: 2nd Fri. Write to P.O. Box 1863, Fremont CA 94538 for more info.

Bay Area Amiga Developers Group (BADGE). Meetings: 3rd Thurs. 8 PM Turing Auditorium, Stanford University, Stanford, CA. For all Amiga programmers. No membership fee.

CWEST Bay Area Commodore Users Group. Meetings: Third

Thursdays, 7:00 PM, Fort Mason, Bldg. C, Rm. 215. Support C-64/128 and Amiga. New Users welcome. Write PO 146731, San Francisco, CA 94114-6731.

Northern California Amiga Club. Meetings: Second Saturdays, 2 pm, Rico's. Supports Amiga. Write: PO 54, Bella Vista, CA 96008.

SMAUG (Salinas-Monterey Amiga Users Group). Meetings: 3rd Tues. at 7 PM, Seaside Library, 550 Harcourt Ave., Seaside, CA. Write PO 776, Castroville, CA 95012 for call Richard Binsacca at (408) 678-2518.

SVAUG-Scotts Valley Amiga Users Group. Meetings: 2nd Thursday, 7:00 PM. The Computer Room, Kings Village, Scotts Valley.

Vallejo AMIGA People (VAMP). Meetings: 2nd Tues. 6:30 PM Software 1st, Vallejo Corners Shopping Center. Contact Bill Braun at (707) 554-0263.

AMSTRAD

North American Amstrad Users Group (NAAUG). National User group. For info send S.A.S.E. to NAAUG, P.O. Box 2178, Ferndale, WA 98240.

APL

APL Bay Area Users' Group. Meetings: 2nd Monday, 6:30 PM, I.P. Associates, 425 Sherman Ave., Suite 200, Palo Alto.

APPLE

A.P.P.L.E. Co-op. Meetings: National User Group. Call A.P.P.L.E. Magazine. Write: 290 S.W. 43rd Street, Renton, WA 98055. Or call (206) 251-5222 for more info.

Apple Pickers of the Redwood Empire. Meetings: 2nd Sat. 10 AM Santa Rosa JC, Shuhaw Hall, Rm. 1735. Call for sample newsletter. (707) 763-8322.

B.E.A.R. Apple II National Users Group. Meetings: send S.A.S.E. to B.E.A.R., 4719 Meridean Ave. #401, San Jose 95118. Printshop & Appleworks files, monthly newsletter.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

Gravenstein Apple IIGS Users Group. Meetings: 3rd Saturdays, 10:00 AM, Coddington Mall, Santa Rosa. User group to explore new and existing programs and uses for the IIGS, to order equipment and material as a group for quantity discounts and to encourage the use and development of the IIGS among current, new and potential users. Call: Aaron Lamar, president, 938-8479.

San Francisco Apple Core. Meetings: 3rd Saturdays, 10 am, Daly City Library, 40 Wembley. BBS, SIGS, PD/SW library, Help List, Newsletter, more. Call: 398-2335/771-5830.

San Leandro Apple User Group. Meetings: 1st Thursdays, San Leandro HS, Rm. 213.

New owners to experienced users welcome. AppleWorks, software and telecommunications SIGs meet monthly. Call: (415) 483-6046.

Society For The Prevention Of Cruelty To Apples. Meetings: 2nd Wednesdays, 7:30 pm, Fremont Main Library, 39770 Paseo Padre Pkwy. Call: Dean Fern, (415) 537-3439.

Tri Valley Apple II Users Group. Meetings: 1st Thurs. 6:30 PM. Call Esther Farnstrom at (415) 829-3672 or Dan Balsey at (415) 828-6237 for meeting location.

ATARI

ABACUS (Atari Bay Area Computer Users Society). Meetings: 1st Saturdays, 19th Ave. Diner, 19th & Lincoln Aves., SF. Open to all Atari XL/XE and ST users. \$20/yr. Call: (415) 753-8483.

Bay Area Atari Users Group (BAAUG). Meetings: 1st Mon. 7:00 PM Bracher School, corner of Bowers and Chromite, Santa Clara. ST users meet at Bracher on 2nd Tuesdays. 8-bit users meet at H-P, Wolf and Pruneridge, Cupertino. BBS: (408) 247-1257.

COAST (California Original Atari ST Users Group). Meetings: 3rd Wednesdays, 7 pm, 2105 Bancroft, Berkeley. Call: (415) 945-1949.

San Leandro Computer Club. Meetings: 1st Tuesdays, 8 pm, San Leandro Community Library. : (415) 352-8118 & 887-2008.

AT&T

Bay Area AT&T PC Users Group - South Bay. Meetings: 2nd Wed. 6:30 PM AT&T Bldg., 1090 E. Duane, Sunnyvale, CA. Call: Joe Lipsig (408) 733-6522. BBS: (408) 462-6329.

Bay Area AT&T PC Users Group. Meetings: 1st Wed. 6:30 PM Alternates between Oak & SF, Call: Joe Mahoney (415) 586-8376. BBS: (415) 829-6027.

AUTOCAD

San Francisco/Marin AutoCAD Users Group. Meetings: 2nd Tuesday evenings. \$20 annual membership fee & newsletter. For further info, call Volker, 331-9466, or Virginia 777-4025.

Sonoma County AutoCAD Users Group. Call (415) 777-9144 for info.

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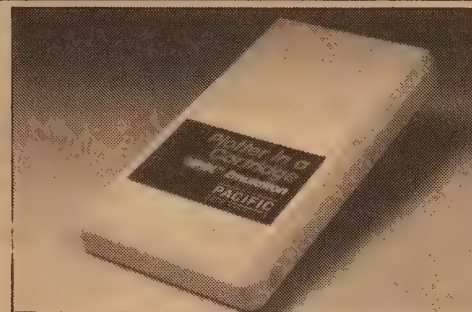
CLIPPER

Clipper User Group Of Sacramento. Meetings: 4th Tuesdays, 7pm. Call: (916) 685-7940.

San Francisco Bay Area Clipper SIG. Meetings: 4th Mondays, 7 pm. Call: Mike Palladino. (415) 751-2719.

Clipper SIG/SFPCUG. Meetings: 4th Mondays, 7 pm, Rm. 1,

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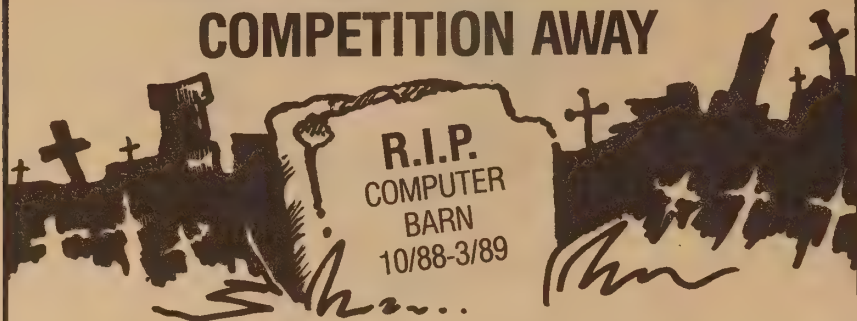


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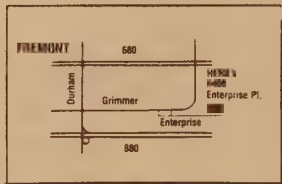
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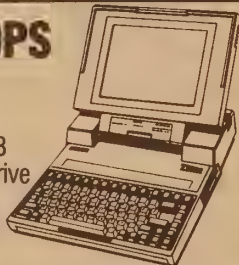
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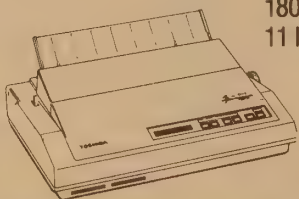
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Campbell Chapter of 64/More Commodore UG. Meetings: 4th Tues. BBS (408) 946-6154.

Commodore 64 Software Users Group For New Commodore Owners. One-on-one help for new owners. Meeting place & time TBA by members. Call (714) 531-2977 for info.

Commodore 64/128 User Group. A mail-based user group with monthly newsletter. Members communicate through newsletter. \$10/yr. Vincent Poy, c/o Commodore Users Group, 895 Pacific Ave. Suite #638, San Francisco, CA 94133-4340.

Commodore Connection Users Group. BBS (415) 458-1005.

Commodore Users Group Santa Cruz. Meetings: 3rd Wednesdays, 2395 Delaware Ave., Santa Cruz. Call: Ruth Wieland, (408) 688-2843.

Cupertino Chapter of 64/More Commodore UG. Meetings: 3rd Sun. Voice: (408) 945-4327. BBS (408) 258-5463.

CWEST Bay Area Commodore User Group. Meetings: 3rd Thurs. Fort Mason, Bldg. C, Rm. 215. Supports C-64/128, Amiga. Write P.O. Box 146731, San Francisco, CA 94114-6731.

Diablo Valley CUG. Meetings: 2nd Thurs. 7:30 1331 Concord Ave. For info write: Box 27155, Concord, CA 94527. Or call (415) 932-2413.

F.U.N.H.U.G. - Fremont, Union City, Newark, Hayward User Group. Meetings: 3rd Thurs. 7:30 PM Newark Public Library, 6300 Civic Terrace Ave., Newark, CA. A user-organized, user-operated user group not affiliated with any computer or software manufacturer or distributor.

Fairfield Commodore User Group. Meetings: 1st & 3rd Mon. Solano County Education Bldg. Write to P.O. Box 2778, Fairfield, CA 94533-9998 for info.

Marin Commodore Users Group. Meetings: 2nd Wednesdays, Redwood High. Call: 883-7748; BBS 883-2558—300/1200.

Mother Lode Commodore Users Group. Meetings: 2nd & 3rd Thursdays, 7:00 PM, Calaveras County Water District Board Room. Supports the Commodore PET, VIC, 64, Plus/4 C-16 & 128. Call: Larry Anderson, 754-5530.

North Valley Chapter of 64/More Commodore UG. Meetings: 1st Sun. Voice: (408) 945-4327. BBS (408) 258-5463.

PLUG (The Plus/4 Users Group). No regular meetings. Over 800 members internationally. Write to P.O. Box 1001, Monterey, CA 93942 for info.

San Jose Chapter of 64/More Commodore UG. Meetings: 1st Sun. Voice: (408) 945-4327. BBS (408) 258-5463.

Silicon Valley Commodore Club. Meetings: 4th Wed. 7 PM Hewlett-Packard, 5301 Stevens Creek at Lawrence & 280. C-64, C-128, & Amiga.

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Convergent Technologies Workslate User Group. Now forming. Write to Dean, PO 4455, Hayward, CA 94545 Call: Dean, (415) 785-7725.

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dBASE SIG/SFPCUG. Meetings: 3rd Thursdays, 7:30 pm, 6 No. San Pedro Rd., San Rafael. Call: John Stephenson, (415) 488-0342.

dBASE Users Group of Marin & Northbay. Meetings: monthly, call (415) 488-0342 for info. Open membership, beginners through developers.

dbDVLPRS. Meetings: 2240 Buchanan, Ste. 5, San Francisco. Includes dBASE II, III, IV, Clipper, Foxbase, dBase, QuickSilver and others. Call Bruce Leandro, (415) 923-0659.

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Desktop Publishing SIG/GMUG. Meetings: 1st Tuesdays, 7 pm, San Francisco Business Times Building, 325 Fifth St., San Francisco. Call: 641-GMUG

Desktop Publishing SIG/SFPCUG. Meetings: 4th Tuesdays, 7:30 pm, 179 Parnassus Ave., SF. Call: Phil Smith, (415) 566-3648.

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San Mateo Ventura Users' Group. Meetings: 2nd Mondays, 7:00-9:30 pm, 619 Bradford, Redwood City. Workshops, lectures, demonstrations of new techniques, shortcuts. Call: Eleanor Church, (415) 726-3181.

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Easytrieve Plus Users Group. Next meeting: June 14, Hyatt Oakland. Call Debbie at Pansophic, (415) 573-7100. All users welcome.

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Epson QX/PX-SF+ Meetings 1st Thursday, 7pm, Fort Mason, Building C, Rm. 216, S.F. For users of Epson QX, PX-8, and QX-PC. PD Disks. Voice: (415) 956-7911.

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Forth Interest Group, North Bay Chapter. Meetings: 2nd Sat. 1 to 5 PM South Berkeley Community Library, corner of Russell and Martin Luther King Junior Way. One block north of Ashby BART station. Contact George Shaw (415) 276-5953.

FOXBASE+

FoxBase+ User Group. PO 20607 Oakland, CA 94620. New group now forming. Call Rachel Cohen, (415) 465-3570.

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Gavilan User Group. Meetings: 2nd Thurs. 7 PM Lockheed Bldg. 162. Cal (408) 379-2774 for info.

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Bay Area Heath User Group (BAHUG). Meetings: 2nd Tuesdays, 7pm, 2001 Middlefield Rd., Redwood City. Call: Ed Hayes, (415) 326-3311.

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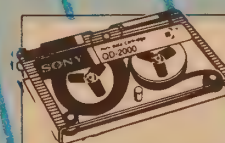
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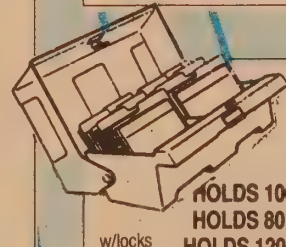
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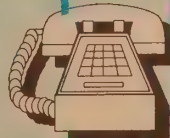


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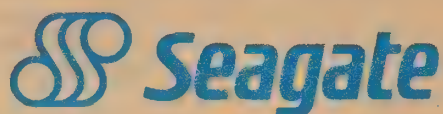
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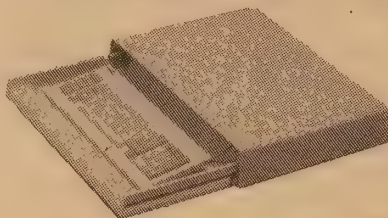
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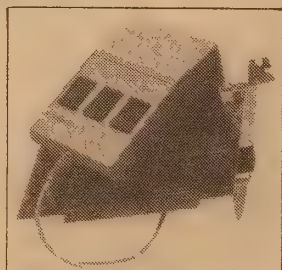
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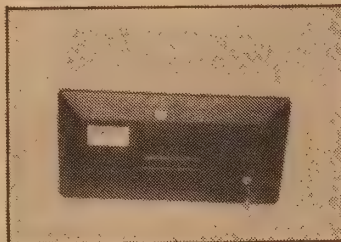
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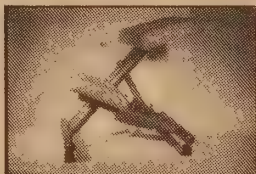
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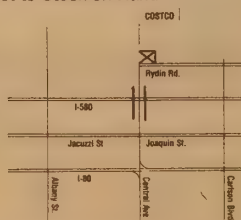
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Bay Area MacForum. Meetings: 3rd Saturdays, noon, Daly City Library, 40 Wembele. BBS, SIGS, PD/SW library, Help List, Newsletter, Newcomers Meeting, more. Call: (415) 771-5830/398-2335.

Berkeley Macintosh User Group (BMUG). Meetings: every Thurs. 6 PM Physical Sciences Lecture Hall, UC Berkeley Campus. SIG meetings on Mondays, Tuesdays & Wednesdays. Call for this week's topic. (415) 849-9114. BMUG, 1442A Walnut St., #62, Berkeley, CA 94709.

Christian Macintosh User Group, San Francisco Chapter. Meetings: 2nd Thurs. San Francisco. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913. Bible Study and DTP SIGS.

Christian Macintosh User Group, Silicon Valley Chapter. Meetings: 1st Thurs. San Jose. Newsletter and support available. Contact Rick Thrasher at (408) 437-1913.

Diablo Valley Apple Users. Meetings: 1st & 3rd Fri. 7 PM Willow Creek Ctr., 1026 Mohr Lane, Concord, CA. SIG's meet monthly. Featuring library of pub. domain software & club's DOM's. Newsletter, demos, group buys hard/software.

EBMUG (East Bay Macintosh Users Group). Meetings: 3rd Tuesdays, 7:30 pm, 724 Allston Way (@4th) near University Ave., Berkeley. Members receive free PD software. Bring blank disk. Meetings open to everyone. Call: Terry Pennington, (415) 486-0147.

Mac Diablo Users Group (MDUG). Meetings: 3rd Tues., Community Room, Glendale Federal Savings, 3101 Crow Canyon Road, San Ramon.

MacCruisers — Santa Cruz. Meetings: 2nd Wed. Jade Street Community Ctr. at 45th Ave., Capitola, CA.

Macintosh SIG/SEF. Apple Cafeteria. Call for dates and time. Tony Meadow, 644-9400.

Macintosh Users Of ComputerWare (MUCoW). Meetings: 2nd & 4th Wednesdays, 7:00 pm, Above ComputerWare store, 490 California Ave., Palo Alto.

Call: (415) 496-1051 or 496-1033.

MacNexus — Sacramento's Macintosh Users Group. Meetings: 3rd Thurs. 6:30 PM Call (916) 446-2411 for info. 350 members, but still informal. Extensive public domain collection.

Macs Of Marin (MOM). Meetings: 2nd Thursdays, 7 pm, Redwood High School, 395 Doherty, Larkspur. Call: Steve Salzman, 459-5707.

Silicon Valley Computer Society's Macintosh SIG. First meeting: September 21, 7:30 pm, 6th floor offices of Arthur Young and Co., Mitsubishi Plaza Bank Building, 55 Almaden Blvd., San Jose. A forum for shared ideas. First meeting will be a demonstration of HyperCard. Other demos are planned for future meetings. Call: Dennis Dawson, (408) 947-5550.

Stanford Macintosh Users' Group (SMUG). Stanford community membership: \$25; public membership: \$35 per year. Call: 723-SMUG. BBS: (415) 723-7685.

TI-West Meetings: 2nd Fri. 8 PM Chabot College, Rm. 600, 25555 Hesperian Blvd., Hayward, CA. Access to a variety of pub. domain software, education modules "problem solving" peripheral committee.

Tri-Valley Macintosh User's Group (TMUG). Meetings: 1st Thursdays, 7 pm, 4695 Chabot Dr., Rm 114, Hacienda Business Park, Pleasanton. Newsletter, large P/D library. Call: James (415) 426-8756 eves, Mike, (415) 838-6165.

MICROSOFT

Mac Diablo Users Group (MDUG). Meetings: 3rd Tuesday, 7:30 PM, Community Room, Glendale Federal Savings, 3101 E. Crow Canyon Rd., San Ramon. Small, helpful group.

Microsoft Word Users Group. Meetings: 4th Mondays, 7:30 PM - 9:30 PM, Hewlett Packard-Cupertino-Oak Room Bldg., 48 Pruneridge, 100 yds. east of Wolfe off Hwy 280. August 22: Chris Donner, Pres. Access Softek on DRAGNET for Text Retrieval and Management. Call: Bill West, 356-8805.

Mirosoft Word SIG of the SVCS. Meetings: 4th Mon. 7:30 PM Hewlett-Packard, Oak Room, Pruneridge at Wolfe, Cupertino. Contact Bill West (408) 356-8805 or Hunter Jackson (408) 446-4097.

MIDI

MIDICRUZ Computer and Music Users. Meetings: 1st Thurs., 7:30 PM, 200 Seventh Ave., Suite 225, Santa Cruz, CA 95062. Contact Robert at (408) 476-8464.

Silicon Valley Techno—Musicians Network. Computers, MIDI, electronic/computer music, home studios, all experience levels, all computers, all musical styles welcome. Call: Bob, (408) 733-3429.

MINDSET

San Francisco Mindset Users Group. Call: (415) 626-4240.

MORROW

BAMDUA (Bay Area Micro Decision Users Assoc.). Meetings: 3rd Tues. 7:30 PM Albany Senior Center, 846 Masonic Street (just north of Solano) in Albany, CA. Voice: (415) 534-4257. BBS: (415) 654-3882. P.O. Box 5152 Berkeley CA 94705.

San Francisco Computer Society. Meetings: 1st Mon. 7:00 PM. Homestead S&L, 5757 Geary Blvd., San Francisco. MS-DOS machines, Osborne, Kaypro, Morrow. Call Ralph Gallagher 929-0252.

NEC

Bay Area NEC/100 Users Group. Meetings: 2nd and 4th Wednesdays. Locations vary. For those interested in laptops, especially Kyocera 80C85 type (NEC 8201a, Radio Shack Model 100 or 102. Call (415) 658-1889.

NOVELL

Novell Users Group. Meetings: Third Wednesdays, 6:30 pm, Coco's restaurant, 1305 South Mary, Sunnyvale. Newsletter, bulletin board, product demos, assistance for beginners. Call: Bill Strouse, (408) 453-3321 days; modem, 24 hrs: (408) 453-3326.

ORACLE

Northern California Oracle UG. Meetings: Call (408) 738-8330 for info. Meets every 3 months at different Bay Area locations. Newsletter published between meetings.

OSBORNE

San Francisco Computer Society. Meetings: 1st Monday, 7:00 PM, Homestead S&L, 5757 Geary Blvd., San Francisco. CPM and DOS machines. No BBS. Call Ralph Gallagher, (415) 929-0252 for information.

PARADOX

Paradox SIG/SFPCUG. Meetings: 4th Wednesdays. Call: Allen Greenkey, (415) 621-8478.

San Francisco Paradox Users Group. Meetings: 3rd Wednesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

San Francisco Paradox Users Group, South Bay Chapter. Meetings: 3rd Tuesday, call Jeffrey Edwards Co. for information, (415) 543-6227.

R:BASE

East Bay User Group. Meetings: Last Thursday of each month. For location and time, Call: Scott Longwell, 848-2080.

Northern California User Group. Meetings: Every 3 months. For schedule, Call: Ken Lebeiko, 881-2652.

San Jose User Group. Meetings: First Wednesdays. For location and time, Call: Hanna Varniz, 984-8484.

REVELATION

Bay Area Revelation UG. Meetings: 1st Tues. Call (415) 759-1210.

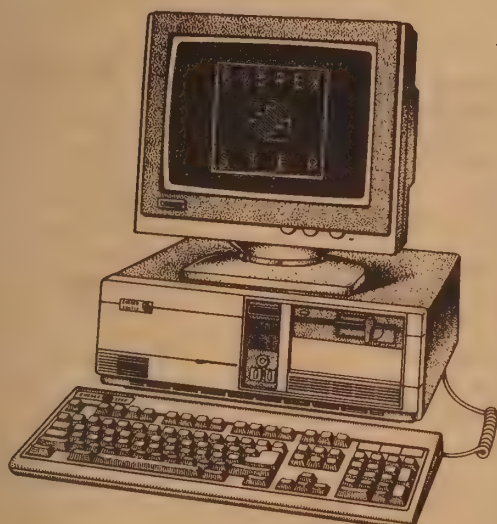
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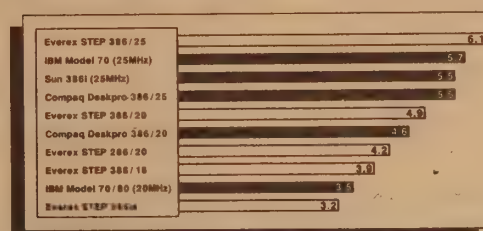


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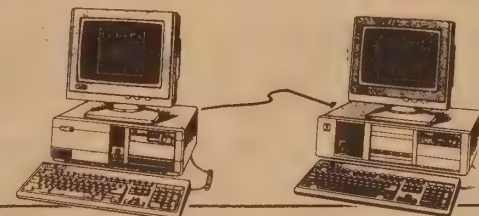
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Solomon User Group of Sili-
con Valley. Meetings: For info
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39899 Balentine Dr., Suite 175,
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S-100 Business Users
Group. Meetings: 4th Tues. 7:30
PM Santa Clara Univ., Rm. 101,
Bannan Engineering Bldg. CP/M
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Hawthorne Dr., Walnut Creek,
CA 94596. Or call (415) 937-

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TRS Nybblers. Meetings: 2nd
Fri. 8 PM Chabot College, 25555
Hesperian Blvd., Hayward. MS-
DOS, CP/M, laptops, Mod 1, 3, 4,
Mod 2, 12, 16, 6000. Mt. Gal-
lagher (415) 522-5960 or Bruce
Jarvis (415) 846-3575.

TEXAS INSTRUMENTS

Bay Cities User Group. Meet-
ings: 1st, 3rd, 5th Wednesdays,
7:30 pm, 1637 Morgan, Mt. View.
Call: Jack, (415) 964-4344.

Brea 99'ers Users Group.
Meetings: 1st Mon. 7:30 PM
Mercury Savings, La Habra, CA.

San Francisco 99ers. Meet-
ings: 3rd Saturdays, 3751 Elston
Ave. Call: Fred, (415) 530-8335.

Thousand Oaks Personal
Computer Club (TOPCC).
Meetings: monthly. Call: (714)
686-0336.

TIMEX/SINCLAIR

Timex Sinclair East Bay Z80
Users Group (TSEBZUG).
John Ezike, (415) 843-5507.

Timex Sinclair Peninsula Us-
ers Group (TSPUG). Contact
George Mockridge, (408) 878-
1773.

Timex/Sinclair Users of Sili-
con Valley (GUTS/SV). Meet-
ings: each Sat. 9 AM Stanford
Univ., Jordan Hall (quadrangle),
Math Bldg. RM 380C. SW library
& newsletter. For topic check
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UNIFY

Unify Users Group. Information
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dist@mrspoc. Call: Steven List
961-6112.

UNIX

SVNet. UNIX User Group. UNIX
Meetings: 3rd Tuesdays, 10500
DeAnza, Cupertino. Talks on
UNIX topics, books, and reviews.
Call: Ralph Barker, (408) 248-
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VENTURA PUBLISHER

San Mateo Ventura Users'
Group. Meetings: 2nd Mondays,
7:00-9:30 pm, 619 Bradford,
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tures, demonstrations of new
techniques, shortcuts. Call:
Eleanor Church, (415) 726-
3181.

Ventura Desktop Publishing
Users Group. Meeting: 1st
Tuesday, 7-9:00 pm, 1650 S.
Amphlett Blvd., San Mateo.
Newly formed group. Call
Eleanor Church at (415) 726-
3181, or Pam Sheble at (415)
574-2003 for information.

VPUG (Ventura Publisher User
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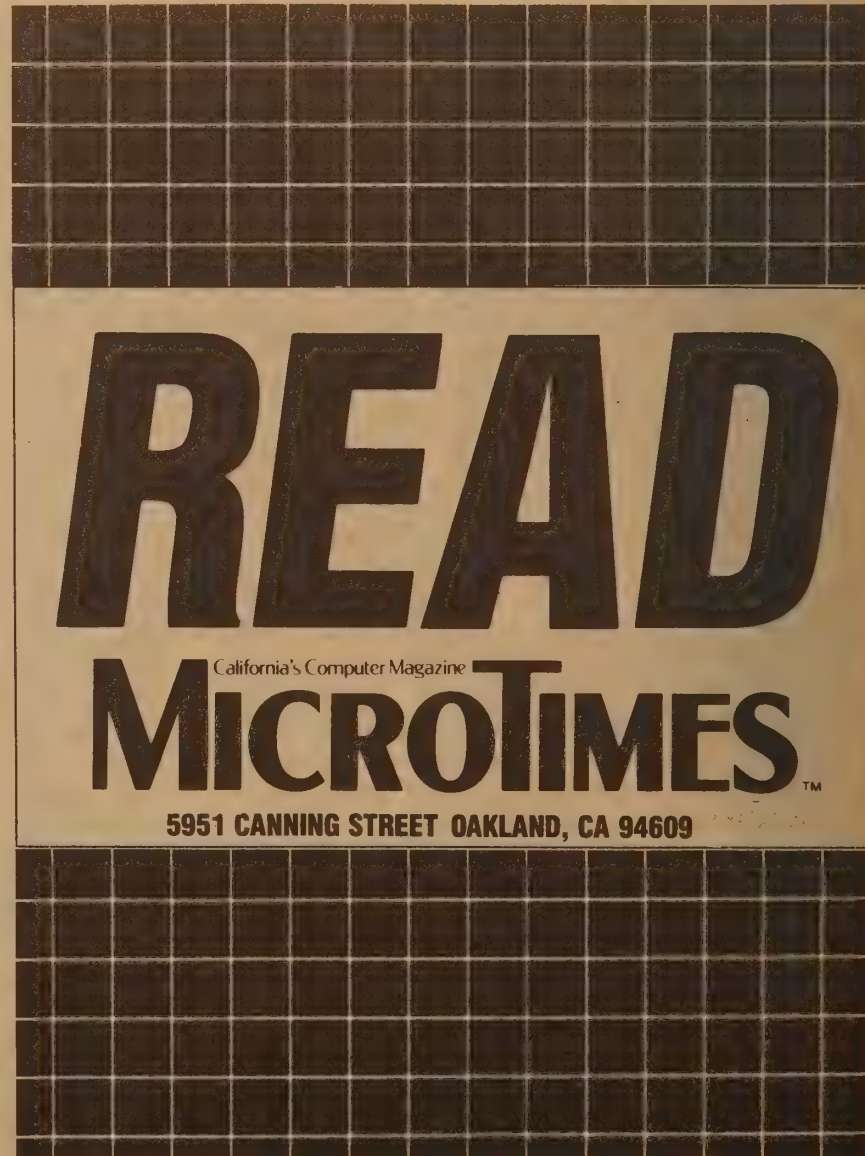
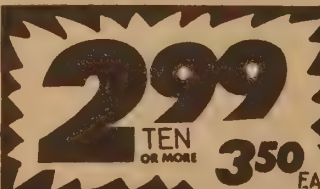
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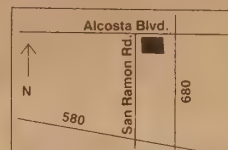




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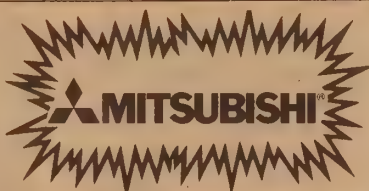
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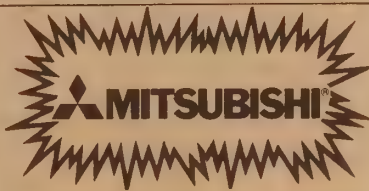


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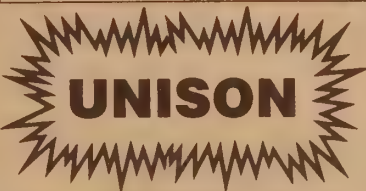


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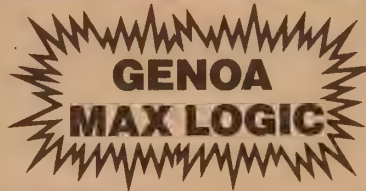
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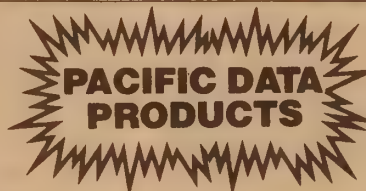
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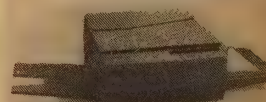


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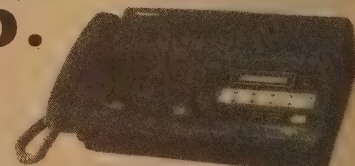
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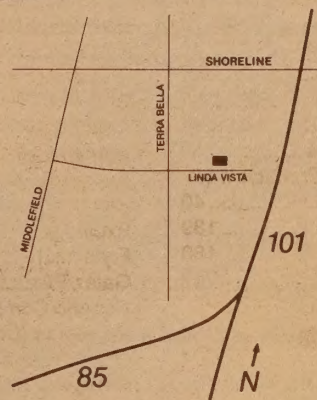
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Robotics And Computer Sales The Wave Of The Future?

On April 15 of this year I was granted an exclusive interview with a super-secret cyborg developed by the Defense Department in conjunction with the North American Computer Dealers Association. The model I talked to was still a prototype and had wires hanging out of its metal body every which way. Apparently all the knowledge of all the computer salesmen throughout the United States was somehow programmed into this thing. It was to become the epitome of the computer salesman of the future. The interview is reproduced unedited.

DVORAK: First of all, do you have a name?

ANDY: Yes, my name is Andy the cyborg.

DVORAK: Is a cyborg different than a robot?

ANDY: Got me. I have no idea. And I couldn't care less to find out.

DVORAK: So you are the perfect computer salesman, I'm told.

ANDY: I don't know how they figure that. I haven't sold one system. In fact I can't even walk yet. But theoretically, yes, I am the epitomized computer salesman.

DVORAK: So with all this information programmed into you, how do you think the industry is doing?

ANDY: What industry? Steel?

DVORAK: The computer industry!

ANDY: How should I know? I'm a salesman, not an analyst.

DVORAK: Hmmm, ok. Well, what computer system is best? Do you think the 80486 will be used in desktop systems?

ANDY: I have no idea what system is best. I've never heard of the 486.

DVORAK: I thought all the brain power of all the computer salesman the whole country over was programmed into you.

ANDY: Absolutely correct. So I guess no one in a computer store has ever heard of the 486. Is this a trick question? You should note that as I scan my memory banks I find that I have no sense of humor, either.

DVORAK: I find this hard to believe. Are you sure that all the brains of all the salesmen were programmed into you?

ANDY: There was one guy in Alabama who refused to cooperate. Otherwise, yes.

DVORAK: And you've never heard of the 486 and you have no sense of humor? What else is wrong with you?

ANDY: Are these flaws? Maybe you're the one who is flawed, huh? Why don't you just ask me about selling computers? Pretend you're a customer and I'm the salesman.

DVORAK: Good idea. Ok, I just walked in.

ANDY: Hello, sir, can I help you?

DVORAK: I just wanted to browse.

ANDY: Then get out, schmuck. We don't want tire kickers in here!

DVORAK: Hey, hey, hey! What gives?

ANDY: Sorry. That seems to be the consensus approach. Try buying something.

DVORAK: Okay. Do you carry Compaq?

ANDY: Compaq? COMPAQ? Are you trying to tell me my business? Do you think you're an expert throwing around fancy terms? Look pal, I'm the expert, okay?

DVORAK: Compaq is a brand, not a term.

ANDY: No, no, no. It's a term meaning small footprint.

DVORAK: C-O-M-P-A-Q! Compaq. It's a brand.

ANDY: I knew that! But it was named after the term. They're a relative newcomer. Yes, we do have Copacks.

DVORAK: COMPAQ! Not Copacks. What models do you have?

ANDY: We're sold out of them right now. The company isn't doing too well. We recommend a Buzzard 386. It's the number-one selling computer in the country. Outstanding product. We have them with memory included and a big 30 megabyte hard disk. Best you can buy.

DVORAK: Cache?

ANDY: Or check or credit.

DVORAK: No, does the Buzzard have a caching controller?

ANDY: I have no ideas about the finances or the company's treasurer. I think they pay their employees by check, though.

DVORAK: I'm asking about a disk controller for the hard disk.

ANDY: It's a scuzzy controller.

DVORAK: On a PC? Who makes that?

ANDY: All PCs have scuzzy controllers. You shouldn't try to be an expert if you don't know what you're talking about. It began with the IBM PC/XT. XT means scuzzy.

DVORAK: Okay. Do you carry Compaq?

ANDY: Compaq?
COMPAQ? Are you trying to tell me my business? Do you think you're an expert throwing around fancy terms? Look pal, I'm the expert, okay?

DVORAK: Compaq is a brand, not a term.

ANDY: No, no, no. It's a term meaning small footprint.

DVORAK: XT does not mean scuzzy!

ANDY: Look pal, I've been selling machines for a decade. I know what I'm talking about!

DVORAK: Ok, stop. Simulation over!

ANDY: How did I do?

DVORAK: Not bad. You are definitely the epitomized computer salesman. Good work. You don't know a damn thing about computers, do you?

ANDY: I'm a salesman, not a nerd.

I reached over to a wire hanging from this robot and angrily yanked it off. The contraption soon started smoking and its head fell off. I looked at the heap of tin as it lay on the floor. Just then a guy came running into the room wondering what the crashing noise was.

"What happened?" he asked, his eyes bugged open.

"It said something about a stomach ache, then collapsed."

"A stomach ache?"

"Yes, he said he ate one too many chips last night!"

Ok, ok. So I don't have a good punch line for this column. The next time you go into a computer store though, and get a dummy for a salesman, ask them if they know Andy. ■

John C. Dvorak graduated from the University of California. He is a contributing editor of PC Magazine and MacUser, considered by many to epitomize the contrarian view of things—a charge that he vehemently denies. Dvorak's motto is: If you have nothing nice to say, then don't say anything at all.

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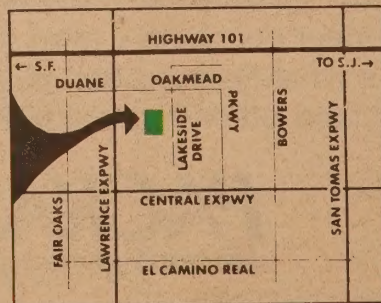


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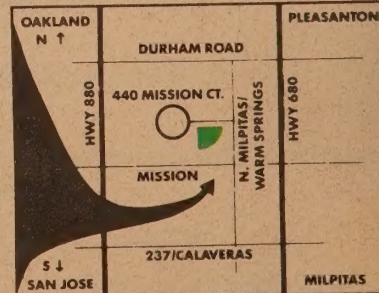
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